A NEW DIESEL-ELECTRIC LOCOMOTIVE

See Advert. Page 11

MODERN TRANSPORT

"THE TIMES" OF THE TRANSPORT WORLD

VOL. LXXVIII No. 2029 [*Registered at the G.P.O. as a newspaper*] LONDON, FEBRUARY 15, 1958 PRICE NINEPENCE

B.T.C. AUTOMATIC WARNING CONTROL

See Page 3

CURRENT TOPICS

A.T.C. on British Railways

CONGRATULATIONS are due to Mr. J. H. Fraser, chief signal engineering officer of British Railways, and his staff upon their success in having developed a highly satisfactory automatic warning or a.t.c. device for universal application. This week Mr. J. H. Currey, signal and communications development engineer, who has been responsible for the long series of experiments on the East Coast main line that have led to its adoption and the placing of large-scale contracts, described the work of development and the equipment as now designed at a meeting of the Institution of Railway Signal Engineers. The Great Western Railway began a.t.c. experiments as long ago as 1905 and had in the next 35 years equipped the distant signals on practically all its important routes with a warning device. The Hudd inductive system was developed nearly a quarter of a century later and after trials on the Southern Railway at Byfleet was adopted by the L.M.S. for its Southend line in 1938. This equipment, in abeyance during the war, was restored to full service in 1947. The L.N.E.R. intended to equip its Glasgow—Edinburgh main line, but owing to the war the work was not carried out. The apparatus designed for the B.T.C. combines the best features of both, includes a visual indication in the cab as well as audible signals, and will be suitable on electrified lines and under extremes of weather conditions. A brief description appears on page 3. By 1962 some £20 million will have been spent in providing a.t.c. on our principal main lines.

Debate on Industrial Relations

AS a step towards the development in the House of Commons of a "sense of common purpose which might be able to contribute to the leadership the nation will desperately need in the years ahead," to quote Mr. Iain Macleod, last week's debate on industrial relations would serve a useful purpose. And although one finds it difficult to endorse Mr. Alfred Robens's indictment of the Government for creating a situation in which were made wage claims unrelated to productivity, one must agree that the Government's past inactivity in this respect is open wide to criticism. In other words, the labour situation over the last two years has been mishandled. One hopes it may be retrieved without undue damage to the economy, but it is nonsense to attribute all the blame to the Minister of Labour. He was right in refusing a limited inquiry into busmen's wages but wrong in the method of refusal. Whilst the Government had given no instructions formally or informally to arbitrators, Mr. Macleod was unable to specify how the unheard third party, consumer—or national—interest, could be represented at such tribunals, which enunciate decisions without explaining the reasons therefor. However, he expects a major contribution towards solving the problem from the Lord Cohen committee on productivity, prices and income, whose first report is due in a few days and before whom the T.U.C. at the eleventh hour wisely decided to appear. If, said Mr. Macleod, they could get from this committee the impartial analysis for which he hoped, it might be of great value to everyone. He pointed out that it was 30 years since there had been an investigation of the collective bargaining system. It is surely time it was examined in the context of full employment. Meanwhile restrictive practices on both sides of industry should be abolished.

Hauliers' Code Lacks Teeth

NO one with experience of road haulage affairs imagined that the Road Haulage Association was going to set the world alight with the code of conduct for long-distance hauliers upon which it has been working for the past year. In fact, there is little prospect that the guidance on fair practices which was published last week (the text appeared in our last issue) will command the respect due to it. A trading code ordinarily prescribes sanctions for those who break its rules; this one says merely that "members who are convicted of persistent and flagrant breaches of statutory regulations may be treated as being in breach of the code of conduct," but the only penalty, it appears, is deletion from a directory of long-distance hauliers which the Association is to re-publish. This has nothing at all to do with the avowed purpose of the code, which is to establish fair rates, fair treatment of sub-contractors and minimum standards for conditions of carriage. An association wields no greater powers than its members are prepared to entrust to it; in the present instance (and one can think of earlier parallels) it looks as though long-distance members abandoned earlier and loftier ideals. If the R.H.A. really wants to raise the standards of trading and to introduce some stability in rates on main haulage routes it could have followed the example of the shipping conference and perhaps introduced fines for offenders and levies to offset trade recessions. It is even possible that licensing authorities and other carriers would look kindly upon a scheme for temporary laying-off of tonnage during quiet periods. As it is, the R.H.A. has a long way to go before it produces a code which will require registration as a restrictive trading agreement.

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Aircraft and Air Traffic Control

SUMMING up the problems of air traffic control in the fifteenth Brancker Memorial Lecture, which was read on his behalf by Captain V. A. M. Hunt before the Institute of Transport on Monday, Air Commodore W. E. G. Mann stressed some of the points made in the abstract which appears on page 12. The most economic and efficient solution would be of great interest to the operators as it might well come about that they would be expected to contribute towards the cost of the ground organisation of the future as was first envisaged by the Maybury Committee a score of years ago. On the aircraft side, in the interests of safety, regularity and effective control, aircraft should be able to decelerate more rapidly and to cruise at common speeds in areas of dense traffic near major airports so that they could be easily fitted into rapid landing sequences. In the past some aircraft seemed to have been designed and bought with perhaps the cost per seat mile as the dominating factor and with little regard to the vertical flight path and general conditions of flight necessary to achieve that figure. An even closer examination of the tracks, heights and speeds over which aircraft might have to fly owing to traffic conditions of the future, was, he thought, needed before large sums of money were invested in a particular type of aircraft with a less flexible performance than those now in service.

A Profit for Once

DIGNIFIED gratification is expressed by the Ulster Transport Authority in its report for the year ended September 30, 1957, at its ability to report for the first time the earning of a surplus—£93,772—after meeting all charges. The tone of the report is not, however, cheerful and it is obvious that the members of the board felt, and rightly, that it was their duty to face the probabilities of the coming years. It would be heartening, said the report, if it were possible to say that the financial results for the year could be taken as a pattern for subsequent years. Unfortunately, this was out of the question. The authority was faced even then with still further demands for increased wages and improved conditions of service. The probable cost of these was almost certain to outweigh all internal economies. In that case, recourse must be had—but with the greatest reluctance—to further increases in rates and fares, even in the face of unsympathetic public reaction and the almost certain knowledge that the stage had all but been reached when the yield from increased charges, made within reason, might be insufficient to redress the balance between expenditure and income. Equal unhappiness is felt about the future of the Great Northern Railway Board. The authority "views with the utmost anxiety the changes which appear to be pending in the working of the Great Northern Railway undertaking in Northern Ireland, particularly if the authority is to become responsible for the continuance of rail services which it believes cannot possibly be, or be made, self-supporting, or if it is called upon to assume the burden of providing substitute road services which would be uneconomic in themselves."

The Quest for Dollars

BY its recent purchase from Thomas Tilling, Limited, for $1,500,000 of Daimler Hire, Limited, the large United States car hire organisation known as Hertz International will, in the opinion of Lord Brabazon of Tara, who remains chairman of Daimler Hire, gain impetus to its expansionist plans. Lord Brabazon felt that apart from the dollars involved in the actual purchase, there were good grounds for expecting comparable revenue in the same greatly desired currency each year as direct payment for services. Furthermore, there was also the increased tourist spending which would result. The fleet of cars would, it was expected, be trebled within four years and direct dollar earnings ought to exceed a million a year by 1960. Another benefit which should not be overlooked was the existence of associates in all parts of the world. From Hull to Hawaii, Manhattan to Milan, Kalamazoo to Woollongong, there were already such facilities for which the British businessman could pay in sterling up to the limit. There was a large expansion programme already in hand within Britain and there would be cars available, if all went well, at every seaport and airport at which visitors entered this country.

Commonwealth Railways

A VERY satisfactory showing is again made by the Commonwealth Railways, the report of which has been issued for the year ended June 30, 1957. Gross revenue for its four railways (Trans-Australian, Central Australia, North Australia and Australian Capital Territory) totalled £4,961,545, an increase of £220,641 over the revenue earned in 1955-56. Gross expenditure increased by £421,362 to £3,597,208, leaving a surplus of £1,364,337, which nevertheless represented a reduction of over £200,000 as compared with the previous year. Increased expenditure on the Trans-Australian Railway was caused by an extended re-sleepering programme, greater engine mileage and a heavier programme of repairs and modifications to rolling stock. On the Central Australia Railway availability of the Sterling North to Marree standard gauge railway as far as Copley and its diesel-electric operation with greater loads enabled a useful economy, offset by the carrying out of an augmented programme of rolling stock and track repair. Although diesel-electric operation reduced some of the costs on the North Australia Railway the result there was less favourable than for 1955-56. The fortunes of the Australian Capital Territory Railway continued to decline although no effort is being spared to reduce its deficit to a minimum. It is fashionable at the present time to fly or motor to Canberra. The Commissioner of the Commonwealth Railways has produced a fascinating report including numerous items of interest from gauge standardisation to the use of radio-telephone equipment on locomotives and brake vans. On long coal trains the train crews communicate with each other and with train controllers as necessary by this means.

Flags of Convenience

THE alarming growth of the system of "flags of convenience" is revealed in a report prepared by the maritime transport committee of O.E.E.C. (Organisation for European Economic Co-operation). It shows that since 1945 the amount of shipping registered in Panama, Liberia, Costa Rica and Honduras has risen from 700,000 to 12,500,000 tons, and is rapidly increasing. Moreover, roughly 18 per cent of the total tonnage, and 25 per cent of the total tanker tonnage under construction in the world at October 1, 1957, was being built under the flags of these four countries. Ships so registered—and most of the tonnage belongs to owners of Greek or U.S.A. nationality or origin—escape taxation and enhanced operating costs caused by high crew standards. They thus compete unfairly with the United Kingdom and other maritime countries and rob them of some of the control they would normally exercise over world shipping. In the event of war the situation might become really serious. According to the report the International Law Commission recommends—and U.K. shipping interests strongly support the proposal—that there should be a genuine link between a ship and her flag, and that international and national legislation should be amended accordingly. There have been repeated protests against the practice by seamen's unions on the ground that it prejudices working conditions. The ships concerned are mainly tankers or tramps.

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S/D Coach built by Valmet O/Y for Helsinki Traffic Buses.

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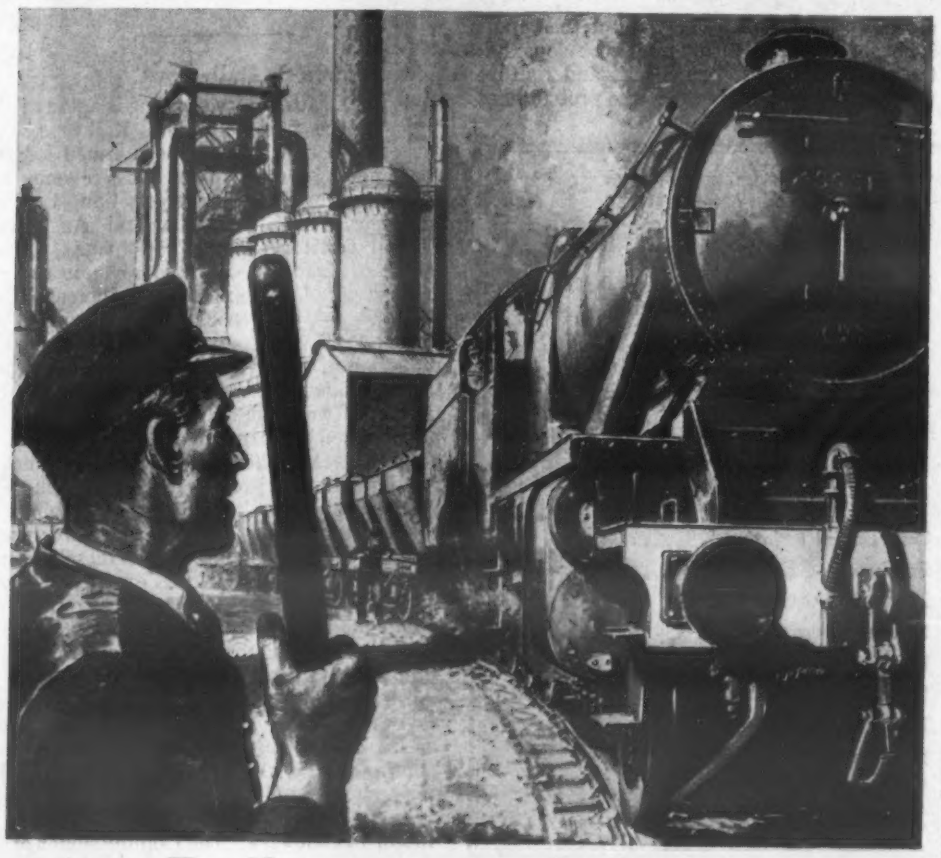


Railways need steel—
steel needs railways

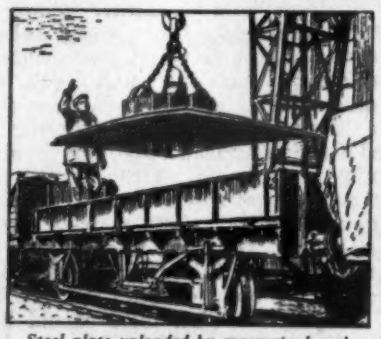
ALL the way along the line (so to speak!) British Railways work in full collaboration with the Iron and Steel industry. Special trucks have been designed for the delivery of raw materials to the works; others for the delivery of finished iron and steel from the works. In fact, British Railways are always ready to consider designing special wagons for carrying any material in bulk.

From cars to caraway seeds
There is nothing British Railways cannot transport and everything is dealt with as a separate problem. For instance, bicycles, chemicals, furniture have special facilities; perishable goods have highly insulated containers—the most efficient of their kind in Britain.

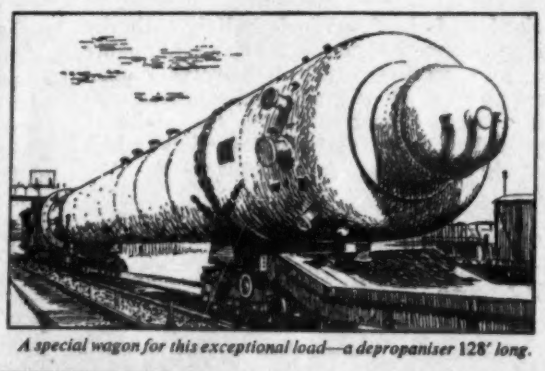
Near-express speeds at night
Most of the freight work is done at night when the lines are quieter. And now more and more freight trains are being fitted with vacuum brakes. Not only does this make for greater safety it also means trains can run at near-express speeds, and so increase line capacity and improve punctuality.

Whatever your product, whatever your problem, you can rest assured that British Railways will give you excellent advice and first class service. Just get in touch with your local Station Master or Goods Agent and your transport difficulties are over.

➡ **GREEN ARROW SERVICE** Operating for both overseas and certain home freights in full wagon loads, this service enables you to register consignments all the way to the destination station or port for only 2/6d. Ask your local Station Master or Goods Agent for full details.



Steel plate unloaded by magnetised grab.



A special wagon for this exceptional load—a depropaniser 128' long.

BRITISH RAILWAYS

MODERN TRANSPORT

Published Every Friday
RUSSELL COURT, 3-16 WOBURN PLACE, LONDON, W.C.1
Telephone Number: TERminus 0303 (3 lines)
Telegraphic Address: Transpubco, Westcent, London

ANNUAL SUBSCRIPTIONS
BRITISH ISLES, 35/-; CANADA, 32/6;
ELSEWHERE ABROAD, 35/-
payable in advance and postage free

The Editor is prepared to consider contributions offered for publication in MODERN TRANSPORT, but intending contributors should first study the length and style of articles appearing in the paper and satisfy themselves that the topic with which they propose to deal is relevant to editorial requirements. In controversial subjects relating to all aspects of transport and traffic this newspaper offers a platform for independent comment and debate, its object being to encourage the provision of all forms of transport in the best interests of the community.

Transport Costs and Charges

COSTS are the most elusive factor in transport, and yet much depends nowadays upon their ascertainment and application to particular items of traffic, if only to enable each carrying agency to concentrate upon that which is remunerative. Without their definition there can be no true allocation of traffic between rail and road, and therefore no guarantee that the transport resources of the country are being economically utilised. Is the study of costs a waste of time: do they matter anyway? Answering this question in an article in *British Transport Review*, Mr. A. E. T. Griffiths, a B.R. (Eastern Region) traffic costing officer, points out that in order to make reasonable economic decisions in a world of scarce resources we must know broadly the cost of any one of a variety of choices or face a steady and insidious rise in national costs of production. The very high proportion of the national effort concerned with transport underlines the prime importance of transport costs, and at a time of relative economic stringency it is most essential to know where transport losses are occurring. The problem of attributing costs to particular services is admittedly more difficult in transport than in most other industries because of the complexity of its operations, the perishable quality of its product and the specialised nature of its manpower and assets. Nevertheless, Mr. Griffiths is able to show that even in these conditions close study and the careful use of reasonable assumptions can provide a breakdown of the bulk of the costs incurred and that a considerable degree of cost assessment of transport operations can be achieved.

Towards Economic Co-ordination

IT is when one delves deeply into the problem and essays a more thorough estimation and allocation of costs that one comes face to face with unreality. That at least is the impression one gains from Mr. J. R. Sargent's* brave attempt to arrive at true economic co-ordination. After repetitive argument and economic dissertation, much of which seems out of tune with practical considerations, he arrives at certain conclusions and recommendations designed to ensure that wherever a transport service is required it is provided by the method which causes the lowest cost in terms of the nation's real resources. The choice of the method would in general be left with the individual user, but it would be the task of a Transport Co-ordinating Organisation to ensure that the choice was "guided by knowledge of the relative amount of national resources used up by every one method of transport or another in each particular case." In short, co-ordination would enforce a structure of relative charges (for given services by road and rail) which would reflect their relative costs. In welcoming the Transport Act of 1953 as providing opportunity for the railways to move towards this ideal, Mr. Sargent suggests that it fails to solve the transport problem since it leaves two major issues outstanding: the financing of the indirect costs of the railways and road transport, and the financing of unremunerative services. Whilst in principle, he says, both road and rail should be responsible for meeting their own indirect costs both must be made to observe a common policy for allocating indirect costs to their different services. In other words, the railways must abandon their intention to rely upon discrimination between services to finance their indirect costs, and there must be an even distribution (per mile run) of the indirect costs of both rail and road over all services.

A New System of Taxation

WITH this end in view the author proposes that the railways should be "instructed" to cover their indirect costs by fixing their charge for every service so that it exceeds the direct cost of the service by a uniform amount, and all road users should be charged a uniform tax, the fuel tax being used as an approximation for administrative simplicity. The responsibility for the roads would be consigned to a British Roads Corporation empowered to levy taxes as necessary to provide an efficient road system. The revenue secured for the Exchequer by the present scale of motor taxation, over and above the cost of the road system, would be contributed by both rail and road, and not, as at present, entirely by road transport, in such a way that neither suffers a relative disadvantage in competition as a result. But he goes on to admit that these proposals are "to some extent academic" because of the powerful public demand for unremunerative services; he would therefore replace the present Transport Tribunal and the Licensing Authorities by one authority for both rail and road transport. This body would act as an appeal court for transport users, and it would have power to require any transport operator to provide a service at a charge less than its cost. In that case the difference between the cost and the charge would be paid by the authority. This subsidy to unremunerative services would be financed by a tax levied by the authority on all transport users, including private motorists and C-licensees. With the complete subsidisation of unremunerative services the present licensing system would be abolished and road service licences freely issued, subject only to observance of proper standards of safety and working conditions.

Track Costs

SPACE does not permit of a review of the arguments from which these ingenious—one is tempted to term them ingenuous—and idealistic proposals emerge, but the book has its appeal as a spirited effort to elucidate an intractable problem. Mr. Griffiths in his article reminds us that in one respect both road and rail operations are carried out under the same conditions in that there is not normally any connection between the cost of maintaining any particular piece of track and the charges made against traffic moving over it. On the road side this is because there is an intermediary between road user and provider, i.e. the State, which maintains the road network and recovers the cost from all vehicles wherever they operate. On the rail side track costs of particular lines are not normally or easily segregated, and in any case the network of routes is, in general, regarded as a fixed cost which is chargeable to the railway undertaking as a whole. He points out that if the railways ever abandoned this approach there should be an interesting reversal of the practice of masking cost differentials in their charges and so providing road operators with opportunities for selecting traffics. The railways would then be able to concentrate on those main routes which are most economical to operate and to discard the high-track-cost routes. Action of this kind would no doubt be anathema to the economist, but it may well figure in the ultimate and practical—if limited—solution of the transport problem.

* *British Transport Policy*, by J. R. Sargent, Fellow of Worcester College, Oxford. Clarendon Press: Oxford University Press. 15s. net.

TENDERS INVITED

THE following items are extracted from the Board of Trade Special Register Service of Information. Inquiries should be addressed, quoting reference number where given, to the Export Services Branch, Board of Trade, Lacon House, Theobalds Road, London, W.C.1.

February 21—Union of South Africa.—South African Railways for three three-axle ARTICULATED TRACTORS (less tyres, tubes and batteries) for 60,000-lb. semi-trailer loads and three 30-ton low-loading SEMI-TRAILERS (less tyres and tubes); and separately for the necessary TYRES and TUBES for the vehicles. Tenders, endorsed "Tender No. F.7078: Road Hauliers and Semi-Trailers," to the Chairman of the Tender Board, P.O. Box 7784, Johannesburg. (ESB/2752/58.)

February 22—British East Africa.—Kampala Municipal Council for three diesel-engined end-loading, 12-20 cu. yd. compression-type REFUSE-COLLECTION VEHICLES, two 36-h.p. diesel INDUSTRIAL TRACTORS, one 2-3 ton diesel DROPSIDE LORRY, one 750-800 gal. vacuum CESSPOOL EMPTIER and one 600-gal. Ashurst-type BITUMEN DISTRIBUTOR. Tender forms from the Town Engineer and Surveyor, P.O. Box 210, Queen Mary's Gardens, Kampala.

February 24—Burma.—Union Purchase Board for 350 12-v. 120-a.h. heavy-duty MARINE-TYPE BATTERIES. Tenders to the Director-General, Union of Burma Purchase Board, St. John's Road, Rangoon. (ESB/3485/58.)

February 28—Union of South Africa.—South African Railways for 1,920 or 144,540 malleable cast-iron or aluminium-alloy vacuum hose COUPLINGS. Photocopies of tender documents from Export Services Branch, B.o.T., price 8s. (ESB/2753/58.)

March 4—New Zealand.—Auckland Harbour Board for 11 5-6,000 lb. capacity and one 8,000-lb. capacity FORK-LIFT TRUCKS, all with 24-in. load centres and 42-in. forks. Tenders, with £20 deposit (returnable if unsuccessful), to the Chairman, Auckland Harbour Board, Quay Street, Auckland, C.1. (ESB/709/58.)

March 5—Australia.—N.S.W. Department of Railways for 20 800-1,000 h.p. DIESEL-ELECTRIC LOCOMOTIVES for mixed traffic on standard gauge. Copies of the tender documents, specification and drawings available on application to the office of the Agent General for New South Wales, 56 Strand, London, W.C.2. (ESB/29065/57.)

[Forthcoming Events appear on page 9]

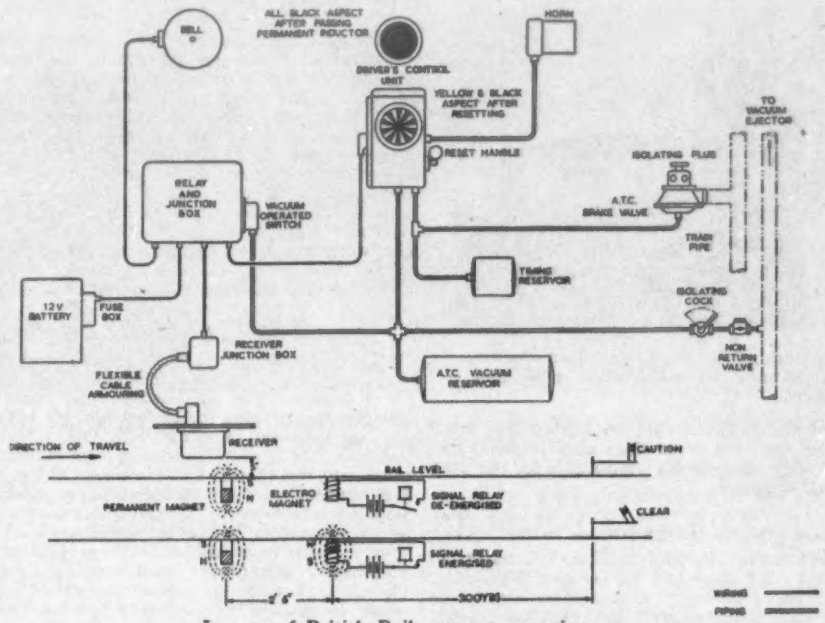
AUTOMATIC WARNING CONTROL

The British Railways System

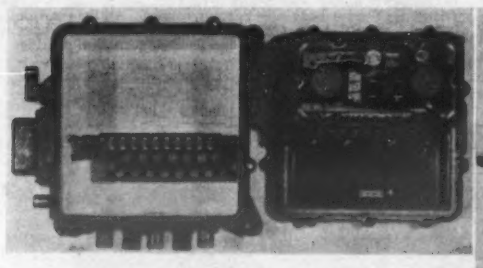
LARGE CONTRACTS PLACED

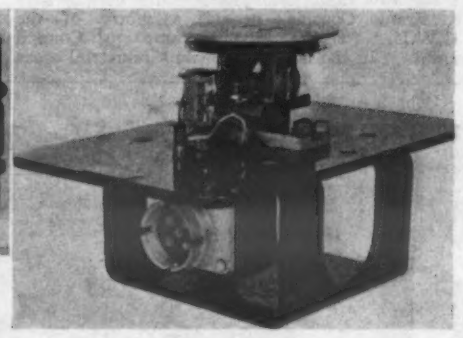
ON February 12 Mr. J. H. Currey, signal and communications development engineer of the British Railways Central Staff read a valuable paper to the Institution of Railway Signal Engineers descriptive of the B.T.C. automatic train control system and indicating some of the problems associated with its development from the original Railway Executive remit in 1951.

After a series of experiments with modified Hudd and G.W.R. type components it was decided in the following year that it were better not to employ a compromise but to design for future requirements with the latest available knowledge. The present system has been founded on that principle and given extensive trials between Kings Cross and Grantham on the Great Northern main line. An interesting addition to it of which the worth is now acknowledged is an indicator in the cab which is a useful adjunct to the audible warnings.



Layout of British Railways a.t.c. equipment





Relay unit with automatic switch and, right, engine receiver with casing removed

Operation

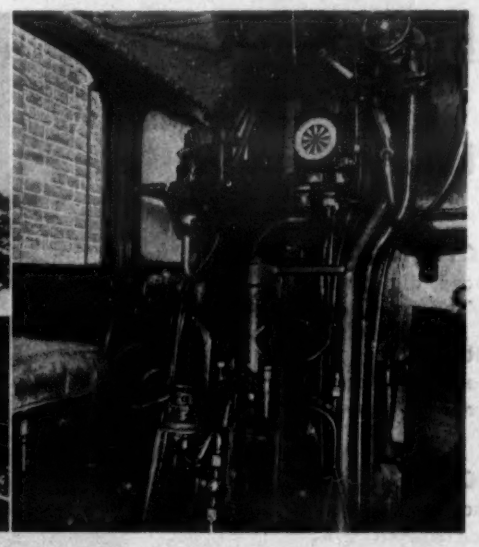
The apparatus operates on a non-contact magnetic principle and is designed to withstand severe operating and weather conditions. Two powerful magnets are fixed under a protecting steel ramp in the centre of the track at rail level 200 yards on the approach side of each distant signal and are mounted between adjacent sleepers, 2 ft. 6 in. apart. The first magnet is of the permanent type and the second an electro-magnet controlled by the signal. The equipment on the locomotive consists of a device cabled to a receiver—a small permanent magnet pivoted between soft iron pole pieces—fitted below the locomotive; this responds to the magnetic field of the track magnets. The receiver is connected electrically to apparatus in the locomotive cab and on approaching a warning signal in the clear position the receiver is influenced by both magnets, which causes a bell to ring in the cab, indicating to the driver that the line ahead is clear.

If the signal is at caution, the receiver is influenced by the permanent magnet only, the result of which is to cause a horn to sound continuously until the driver acknowledges the warning by depressing a resetting lever. This action simultaneously turns a visual indicator in front of the driver from its normal display of an all black aspect, to show a black and yellow spoked aspect, which serves to remind the driver that he has acknowledged the warning indication received, and should take control of the locomotive brakes and be prepared to halt at the stop signal.

Brake Application

Failure to carry out the acknowledging action results, after a three-second delay, in the operation of an automatic brake valve, which gives progressively a full brake application on locomotive and train and brings it to a halt, without any action whatsoever on the part of the driver or fireman. When the system is applied to colour-light signals the clear indication is given each time a driver meets a green signal, and the warning is given whenever he encounters a signal showing any aspect other than green.

Automatic train control, or more properly, automatic warning control, does not, nor is it intended to, relieve a driver of his normal and inescapable responsibility for observing the signals on his route, and acting promptly on their indications. The apparatus is an aid to the driver, particularly in inclement weather, and is one of a number of safety measures which are being extended under the British Railways modernisation programme. These include the widespread replacement of semaphore signals by colour-light signals, the installation of more track circuits and the provision of more power-operated signalboxes in replacement of those which are manually operated.



Locomotive 60007 "Sir Nigel Gresley" passing over track inductor; right, driver's control unit in cab showing aspect after caution signal

Contracts

Contracts have been placed by the British Transport Commission for initial supplies of British Railways standard automatic train control apparatus. They are valued at over £500,000. Most of the equipment ordered, which comprises 2,000 sets of track apparatus and sufficient equipment and spares for fitting 2,000 steam locomotives, is expected to be delivered this year. So far as the track apparatus is concerned, orders have been made for 2,500 permanent magnet track inductors, distributed among Darwins, Limited, Sheffield; Wm. Jessop and Sons, Limited, Sheffield; Jas. Neill and Co. (Sheffield), Limited; Swift Levick and Sons,

(*Continued on page 6*)

after extensive tests and trials

Stewarts & Lloyds Limited state that the Brush-Traction Diesel-Electric Locomotives supplied over twelve months ago for shunting services in the integrated Iron and Steel Works at Corby are giving very satisfactory service.

Brush Traction Locomotives, recognised for their performance under the most arduous conditions, are also giving outstanding service to the Steel Company of Wales; Consett Iron Co.; Lever Bros.; and other large industrial users.

BRUSH TRACTION

Illustrated above is a 060 Diesel-Electric Shunting Locomotive of 400 H.P. made by Brush Traction Ltd.

Diesel-Electric Shunting Locomotives

—the logical choice

Write for literature on Diesel-Electric Shunting Locomotives to:
BRUSH TRACTION LIMITED . LOUGHBOROUGH ENGLAND
Member of the Brush Group

B.T. 3

The recipe—the entrée, and traction equipment

Taste a dish prepared by a great chef; ask him to give you the recipe and to tell you exactly how he makes it . . . then—following his instructions—prepare the dish yourself. You notice the difference? Well, after all, you would expect to.

The odd thing is that, with the best will in the world, the chef cannot tell you what he does that makes the difference.

It is even more odd that something similar can happen with an engineering company that has been in business for a long time. This is because the solutions to many of the problems that arise in the manufacture of electric traction equipment are supplied by the experience and knowledge you cannot find in text books. This is why a name with a long history counts for something.

Crompton Parkinson LIMITED
A GOOD NAME FOR TRACTION EQUIPMENT
TRACTION EQUIPMENT

TRACTION DIVISION, CHELMSFORD, ESSEX. TEL: CHELMSFORD 3161. 'GRAMS AND CABLES: CROMPARK CHELMSFORD

LORRY—BUS—COACH

Glasgow Takes the Plunge

ON February 6 Glasgow Corporation unanimously accepted a recommendation of its Transport Committee to abandon tramway operation "as soon as practicable," generally to replace trams by buses, and to limit the trolleybus fleet to 200 vehicles. Councillor G. Reid (Progressive) suggested a period of 10 years for the abolition of the trams instead of the 15 years proposed. Councillor J. J. McCrossan, convenor of the Transport Committee, replied that the conversion would be carried out as quickly as possible. He pointed out that 300 trams had been scrapped in Glasgow in the past three or four years, and that Edinburgh had taken five years to scrap almost the same number. A proposal that the transport department's Pinkston power station be transferred to the South of Scotland Electricity Board was approved.

Nine-Day Bus Enthusiasts' Tour

NEXT June the Omnibus Society hopes to run a nine-day "around Britain tour" by private coach, enabling members to see or inspect bus operations at points en route, but leaving parts of some days free for individual activity at places of interest. The itinerary would include the West Midlands, North Wales, Merseyside, the Lake District, the Ayrshire coast, Glasgow, Edinburgh, Newcastle, Hull, Sheffield, Nottingham and Leicester.

Utility Vehicle Used as P.S.V.

TWO partners in a Coventry taxi business were fined £2 10s. each at Nottingham Magistrates Court on January 31 for using a Minibus as a public service vehicle without the necessary licence. They pleaded guilty. Inspector R. Lockie, prosecuting, submitted that a vehicle fitted with seats for more than seven people must have a public service vehicle licence if it was used for private hire and Police-constable J. Shirley, of Nottingham Police traffic department, said he saw the vehicle in Carrington Street, Nottingham. It was carrying five people and there were seats for six more. Defendants said it had been used to take football supporters to Nottingham. A hackney carriage licence had been taken out and they were now using the vehicle as a seven-seater taxi.

C-Hiring: Massive Fine

AT Dundee Sheriff Court, Joseph Cosgrove, trading as James Cosgrove, of 262 Hawkhill, Dundee, was fined £800 in respect of 235 offences relating to licence conditions. At first, he objected to a list of 167 cases of having, with intent to deceive, used and allowed to be used his drivers' records in such a manner as to purport to identify vehicles as licensed vehicles operating under C-hiring allowance. His agent contended that drivers' records were not documents by which a vehicle was to be identified as being an authorised vehicle; there was authority under the regulations for licensing authorities to dispense with the keeping of records in respect of particular drivers; if drivers' records were documents identifying a vehicle as being an authorised vehicle there would be no question of any dispensation of the keeping of records. Cosgrove later pleaded guilty to the list of 235 alleged offences, which included 167 instances involving the use of his C-licensed vehicles for the carriage of goods for hire and reward; 59 instances of using vehicles outside the terms of his limited B-licence; and nine cases of using vehicles outside the radius permitted on a B-licence. His agent said that Cosgrove had established his drivers' hiring agency at his own instead of a separate address and the books were mixed up.

Licensing Authorities Report

THE summary of the annual reports of the Licensing Authorities for Public Service Vehicles for the year ended March 31, 1956, has made its customarily belated appearance and still follows the abbreviated and emaciated form of the immediate postwar years (H.M. Stationery Office. Price 3s. 6d.). Most areas report strenuous endeavours to economise by the introduction of one-man buses and the withdrawal of certain unremunerative services, while the Western area mentions the effect upon operators of competition from new businesses specialising in private hire. There were during the year 1,344 prosecutions for infringements of the relative Acts and 1,183 resulted in convictions.

A Fargo (British-built Dodge) operating with trailer working in the Copenhagen docks; right, Richard Biffa, Limited, a London bulk materials and liquids haulier, runs this Foden high-sided tipper

Big Contract for Trukair

BECAUSE of adverse experience of rail transport and port handling, the Rubery Owen group recently decided to export Easiclene kitchen equipment, made by a subsidiary, by air to the Continent on a pilot basis. The first consignment left Southend Airport on February 4 by the Trukair service operated by Sabena (Belgian Airlines), Air Charter, Limited, and Atlas Air Express. Initially concerned are 2,000 washing machines for Belgium. The air ferry is between Southend and Ostend.

This Wolverhampton manufacturer states that experience of rail transit to Ireland was that, even packed in special containers costing £3, sink units continually arrived with damaged enamel. By air the washing machines will arrive 48 hr. after leaving the factory, compared with 10-14 days by the surface route. The first air consignment consisted of 110 washing machines.

Small Operator's Losses

WHEN W. J. Simmons and Company, of Great Gonerby, applied for fare increases between 1d. and 4d. on its routes in order to come into line with the Lincolnshire Road Car Co., Limited, it was stated that up to December, 1956, the operator's loss amounted to £384. For 1957 it was estimated at £954.

Socialist Threat Widely Spread

RENATIONALISATION would affect the whole of road haulage by the introduction of restrictions on its activities. It would also restrict the trader's freedom of choice of transport, and is bound to restrict the operation of C-licensed vehicles. Mr. R. Morton Mitchell, chief executive officer of the R.H.A., said on Friday last week that these were his impressions after personal discussions with those partly responsible for carrying out Socialist policy.

London Buses for Ceylon

SIXTY London Transport double-deck buses, 40 A.E.C. RT-class and 20 Leyland RTL-class, most of them of 1950 manufacture, are to be shipped almost immediately to Ceylon for the services of the new Transport Board there. This batch of buses has all been through body overhaul in the last four months or so and they have also had mechanical replacements where essential. The buses will be shipped as they stand, save for new tyres.

Bad Roads Cause Driving Strain

ROAD transport is one of the few industries where the job has become more difficult as the machine doing the job becomes better, says Mr. Frank Cousins, general secretary of the T.G.W.U., in the Roads Campaign Council journal. "In the larger towns and industrial areas traffic movement is so difficult that it imposes an increasing element of nervous tension on a driver who is constantly in charge of a big and heavily loaded goods vehicle," he adds. The question of this nervous tension affecting a driver's health does not appear to be sufficiently appreciated—but it is a matter that cannot be too strongly stressed. These men really are in a state of constant anxiety due to the excess number of vehicles on completely inadequate roads. Physical and mental strain is accentuated by long working hours, day or night.

T.R.T.A. Co-operation Promised

MEMBERS of the T.R.T.A. in the Medway towns have been asked to do all they can to make a success of a Saturday traffic experiment in progress at Chatham. This involves a ban on waiting vehicles in the busy section of the High Street, between 11 a.m. and 5 p.m., in an effort to render the thoroughfare safer for shoppers and other pedestrians. Drivers may stop only to pick up or set down passengers or to load or unload goods. The Chatham Council asked the T.R.T.A. for its support in making the experiment a success.

C.P.R. Haulage Acquisition

NOW that it has received authorisation from the Quebec Transportation Board, the Canadian Pacific Railway is preparing to purchase control of Smith's Transports, a large haulage company in Canada. The order authorises the transfer of the majority of shares of Smithson's Holdings, which owns Smith's Transports, with 2,000 vehicles operating over 5,000 miles on routes stretching from Halifax, Nova Scotia, to Winnipeg. C.P.R. plans to obtain control of all Smith's road transport and other operations, with the exception of H. Smith Transport Company which will remain in the control of its present owners. (MODERN TRANSPORT, September 14, 1957.)

Fuel Tax Cut to Fight Inflation

THE chairman of the British Road Federation, Lord Derwent, has told the Chancellor of the Exchequer that the Government could fight inflation by reducing motor fuel tax. He has asked for an informal meeting with Mr. Heathcoat Amory. "It is time that a re-examination took place into the effects of the swollen yield of motor fuel taxation on the national economy generally," says Lord Derwent. "I am convinced that such a re-examination before the Budget would show that reducing this tax would have greater anti-inflationary advantages than keeping it at the present high rate. The general taxation of road users has reached such swingeing proportions that it has created a genuine feeling of resentment. It cannot be regarded as just that one form of transport should pay nearly 10 per cent of the total revenue through the taxation of road vehicles which are essential to trade and industry."

Bus and Coach Developments

United Counties Omnibus Co., Limited, proposes to divide its Wellingborough—Mears Ashby—Northampton service at Mears Ashby.

Southern Vectis Omnibus Co., Limited, proposes to merge its summer Seaview—Shanklin service with those between Bembridge Church and Shanklin and Shanklin and Ventnor (Town Hall) as a Seaview—Ventnor service. All-the-year-round it seeks a Ryde—Bembridge—Yaverland—Sandown—Shanklin service to replace existing Ryde—Bembridge and Bembridge—Shanklin services.

Firestone
All-Traction

is saving TRUCK OPERATORS money

Here's why—

1 DUAL PURPOSE ON-AND-OFF-THE-ROAD
Combines long, smooth wear on metalled surfaces with extra traction and pulling power on unmade roads.

2 INCREASED DEPTH OF TREAD
New, long-wearing, cut-resisting tread rubber gives longer non-skid mileage.

3 TOUGH RUGGED TRACTION BARS
Give added stability *on* the road, dig in and take hold for extra traction *off* the road.

4 CONTINUOUS CENTRE RIBS
Assure safe, positive stopping power and longer even wear. New tapered grooves in tread reduce stone trapping.

5 TENSION-DRIED GUM-DIPPED CORD
Prevents tyre growth, tread cracking, separation and provides a stronger bonding between cords.

Experience Counts— 44 Factories throughout the world. Firestone total sales exceed £1,000,000 per day.

Firestone ALL-TRACTION TRUCK TYRES Give BETTER PERFORMANCE and CUT COSTS for on-and-off-the-road hauling, on farms, quarries and other places where dual-purpose tyres are needed.

Firestone TYRES — consistently good

KALAHARI CROSSING

Albion Reiver Breaks New Ground

PIONEERING journeys by commercial vehicle are becoming rare these days but new ground for a heavy vehicle was broken recently when an Albion Reiver six-wheeled 7-8 ton lorry made a successful crossing of the desolate Kalahari Desert in South West Africa. The trip was undertaken to determine the suitability of long-wheelbase vehicles for operation in sandy regions with payloads of about 8 tons. Over 3,000 miles were covered in 22 days, the Leyland O350 diesel engine of the Reiver consuming 358 gal. of fuel, an average fuel consumption of 8.8 m.p.g. Average speeds of 30 m.p.h. were maintained on the tarmac stretches and 20 m.p.h. over sand.

To make the Reiver more suitable for desert travel, certain modifications were carried out. The track was reduced by 9¾ in. at the front and 4¼ in. at the rear. The worm-driven rear bogie was also modified to 8-in. centre axles in place of the standard 7-in. centre units. Fuel oil filters, brake tubing and the spare wheel carrier were repositioned and a guard was fitted to protect the radiator grille.

Two views of the Reiver taken during the Kalahari crossing which give an indication of the conditions encountered

Every Natural Obstacle

During the arduous journey, the Albion encountered almost every obstacle nature could provide. Extreme heat prevailed over many miles of very soft sand. In one place the road was flooded for over 3 miles and the vehicle had to negotiate a swamp with a slippery black turf surface. Direction was maintained only because the lack of trees indicated where the tracks might be. On another occasion, the driver had to take a bearing on a star and then drive north for 2 hr. to reach a lateral graded road.

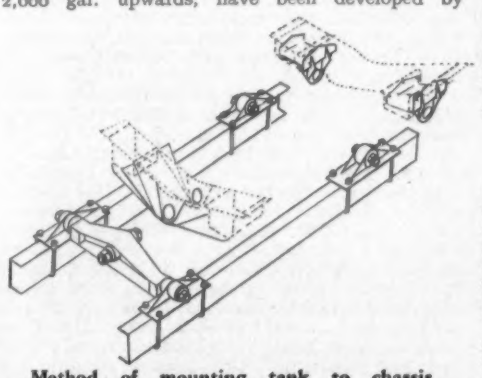
For negotiating sand dunes, the "rocking" method was adopted to surmount the steeper gradients. With this method, the vehicle is rushed at the sand dune in the highest possible gear, and just prior to stalling reverse gear is quickly engaged and the vehicle is reversed as fast as possible up an adjacent sand dune. Again, just prior to stalling an intermediate forward gear is selected and the original sand dune is again rushed in an attempt to proceed as far as possible. The procedure is continued until the vehicle reaches the summit of the sand dune. The essence of these tactics is to achieve the highest gear and the maximum speed as soon as possible which necessitates quick gear changing on the downward slopes. At all times, however, the front wheels must be maintained straight on the tracks and not allowed to cut fresh tracks as this retards the momentum of the vehicle.

In addition to the natural hazards, the driver had many other experiences. Elephants caused trouble on many occasions. On the second day of the journey, the driver was asked to trace a wanted man, who was later caught and handed over to the police. During the journey, the crew met Seretse Khama, who showed considerable interest in the Reiver as a possible vehicle for carrying cattle.

Light-Alloy Road Tank

THOMPSON DESIGN WITH THREE-POINT SUSPENSION

ROAD tanks of aluminium alloy employing a unique form of construction and three-point flexible mounting, which offer a number of advantages over orthodox rigidly mounted tanks for carrying capacities of 2,000 gal. upwards, have been developed by Thompson Bros, (Bilston), Limited. The first four tanks to the new design, of 2,400-gal. capacity, are nearing completion and are being mounted on A.E.C. Mercury Mark II chassis for the Shell Group for the transport of chemicals.



Method of mounting tank to chassis through preloaded Metalastik bushes

As well as the inherent advantage of lighter weight of aluminium over steel, which in the case of tanks of 2,000-2,500-gal. capacity can be used to provide an additional 200-400 gal. payload capacity for a given gross weight, for the majority of loads, aluminium-alloy tanks do not require the expensive internal protective linings necessary with mild-steel tanks. External painting can also be dispensed with or simplified.

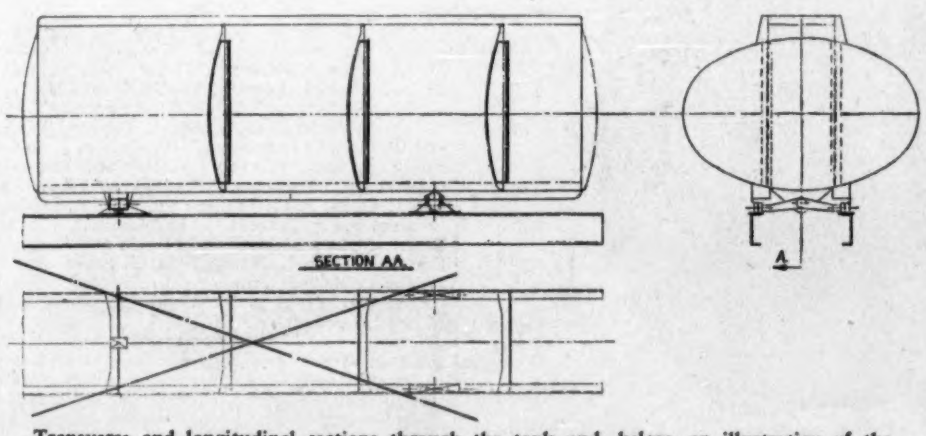
Generally, the orthodox steel tank is designed simply as a container of sufficient strength to carry a given liquid load and to withstand stresses and shocks transmitted to it from the vehicle chassis. The designed barrel thickness might well be below the economical plate thickness as far as ease of fabrication and removal of welding distortion are concerned. In the case of aluminium alloy, plate thickness would generally be increased in accordance with the known relative strengths of mild steel and the alloy being used. With the rigid mounting normally employed, an abrupt change in overall beam section of the combined tank and chassis occurs immediately forward of the front tank bearer, at which point high stresses might necessitate reinforcement of the chassis frame.

New Design Approach

An entirely different design approach has been made by Thompson Bros. both in the tank structure and in the method of mounting. Basically, the tank consists of four pressed box-section members running the full length of the tank and spaced by bulkheads or baffles. The bulkheads themselves are bridged by vertical flanged members joining the upper and lower box members. This rectangular framework forms the main stress-bearing structure and the main tank shell, which is welded to it, is subjected only to stresses arising from the carriage of its liquid load. The top of the tank is formed into an open rectangular box section, which is eventually closed by welding in a sheet of flat tread-plate alloy incorporating manhole openings. This design makes for ease of fabrication by leaving the top of the tank completely open during internal welding and also provides, when the closing plate is fitted, an integral walkway along the centre of the tank top.

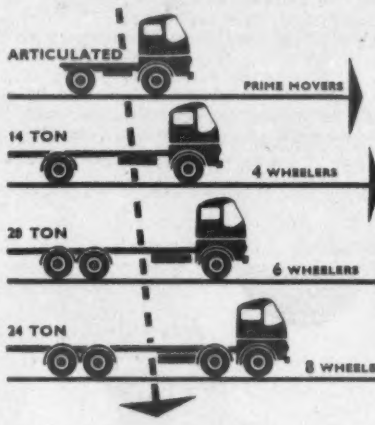
The smaller illustration shows the method of three-point flexible mounting. The forward end of the tank is supported on a transverse beam which is secured to the chassis side members through Metalastik preloaded rubber bushes. The tank is anchored to the beam by a longitudinally aligned similar rubber bush, while at the rear end, similar bushes are laterally disposed in tank-supporting bolsters secured to each chassis side member. The disposition of the three mounting bolsters is shown in the lower illustration,

(*Continued on page* 16)



Transverse and longitudinal sections through the tank and, below, an illustration of the arrangement of the three mounting bolsters showing how stress transference is reduced

an outstanding range of heavies



With full vision cabs providing more comfort and safety and effecting a worthwhile reduction in weight, Guy Invincibles are better than ever.

Chassis can be supplied with alternative wheelbases, axles and suspension, powered by Gardner 7-litre 5LW (4 wheelers only), Gardner 8.4 litre 6LW, or Meadows 10.35 litre 6DC630 oil engines.

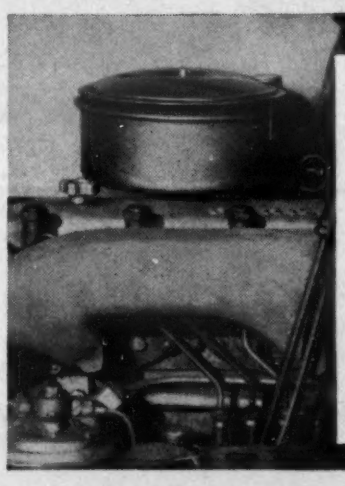
Precision built for long life and low operating costs, the Invincible range caters for most requirements in heavy haulage.

Last, but not least, day and night factory service is now available to operators.

GUY MOTORS LTD. WOLVERHAMPTON

tailor made by GUY

Mr. Everley buys engine life with Shell Rotella Oil



P6 Powered Commer does 112,000 miles without de-coke

Mr. M. B. Everley, joint director of Everley Bros. Ltd., Hayes, Middlesex, heavy haulage specialists, recently sent one of his fleet into the workshops to have new piston rings fitted. The vehicle, a 6-ton Commer with a Perkins P.6 engine, had done 112,000 miles fully loaded, without the head being removed. When the pistons were drawn it was found that every ring was free in its groove and clean.

'I wasn't at all surprised when I received the workshop report' comments Mr. Everley, 'I've always used Shell Rotella Oil for all my diesels and I've yet to see one of my trucks in the shops with lubrication trouble.'

SHELL LEADERSHIP IN LUBRICATION

REGULAR CARGO SERVICES

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HAMBURG, BREMEN, RHINE PORTS, HARLINGEN, AMSTERDAM, ROTTERDAM, ANTWERP, GHENT, TERNEUZEN, DUNKIRK, CALAIS, BOULOGNE, TREPORT, DIEPPE, HAVRE, CHARENTE, BORDEAUX.

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SHORT SEA ROUTE PORTS

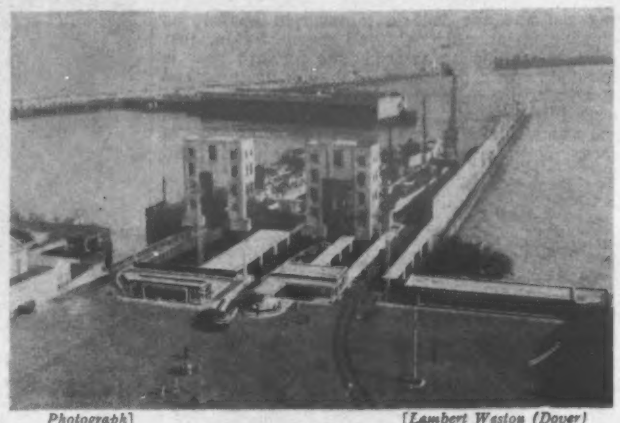
Handling the Passenger Traffic

*By HENRY REES, M.Sc.(Econ.), Ph.D.**

ALONG the southern and eastern shores of England lie a number of ports with specialised functions, handling the traffic in passengers, mails and perishable and valuable cargoes between Britain and the near Continent and the Channel Islands. They are the packet stations, so-called from the fact they are used by ships, or packet boats, making regular sailings for the conveyance of passengers, mail and freight. They differ from most other ports in that speed is an essential part of their organisation. Unlike bales of wool, for example, passengers cannot be left in store for several days; tomatoes and flowers, even when containers are used, should reach the market at the earliest possible moment. It is true that there is no particular need for haste in the handling of wines and perfumes, but these are sufficiently valuable to repay the cost of a comparatively expensive journey.

All this implies, in modern times, good rail communications, particularly with London; and in each port there has for long been an intimate connection between the port and the railway authorities. The railway runs right on to the quay or jetty, and special trains connect with the arriving or departing ships. With such valuable cargoes as passengers, mails and wines, it has proved worthwhile to spend large sums in port improvement; indeed, the cross-Channel traffic has expanded in spite of poor harbours, not because of good harbours. All the harbours are to a large extent man-made, and it is difficult to resist the conclusion that most would have disappeared as ports were it not for their position in relation to the Continent.

Cross-Channel traffic may be traced back to the Roman occupation, and in several instances there was a Roman port close to the modern harbour. In the middle ages pilgrims, crusaders, merchants and nobles crossed the narrow seas; but it is only since the coming of the railway that the ordinary holidaymakers have found it possible in any numbers to use the Channel ports on the way to or from the Continent. The figures speak for themselves. In 1860, 215,000 passengers used the three south-eastern ports of Dover, Folkestone and Newhaven to travel to or from Calais, Ostend, Boulogne or Dieppe. By 1887 the number had more than doubled to reach 468,000; by 1900 it had almost doubled again (871,000) and by 1933 more than a million people were travelling on these routes (1,135,000).



Photograph [*Lambert Weston (Dover)*

The Dover car ferry terminal with the eastern arm of the harbour in the background

The war of 1939-45 made only a temporary halt in the flow of holidaymakers, and in 1956 Dover alone was used by 1,791,000 people. Meanwhile a new type of traveller had made his appearance—the motorist with his car. Dover, already the home of the train ferry, pioneered in 1953 by introducing the special car ferry, on to which the motorists drove from the quayside into a garage, as he had already been able to do on the train ferries introduced in 1936; before long other ports may well find it politic to follow suit. Different types of specialised services have been developed elsewhere. Harwich has, of course, provided a train ferry for freight wagons since 1924; Tilbury provides drive-on and drive-off facilities for lorries, trailers and containers; Southampton provides an overnight service by which the traveller saves a day of his holiday, a facility which Newhaven has also been offering during the summer.

Ports of the Past

In the past many ports have had their share of the cross-Channel traffic. In 1635 Rye was competing with Dover, shipping passengers to Dieppe. In 1790 a regular service was in operation between Brighton and Dieppe; in 1841 the Dieppe traffic was being handled at Shoreham. In 1846 Ostend was paired with Ramsgate for the Belgian mails and in 1863 steamers were running between Littlehampton and the Channel Islands; the service was later extended to include St. Malo (in 1867) and Honfleur (in 1870).

In 1867 a Dutch mail service was inaugurated between Flushing and Queenborough, whither there was a branch off the line of the London, Chatham and Dover Railway Company which terminated at Sheerness at the mouth of the Medway. Queenborough is now a sleepy town which retains a small cargo shipping trade. About 1883 the rival railway company, the South Eastern, built a pier on the Isle of Grain, facing Queenborough. The new berth was christened "Port Victoria" and steamer services were begun to and from Flushing. Port Victoria now no longer exists, in spite of certain atlases, for the hotel and the jetty were demolished during the construction of the Kent Oil Refinery.

The Medway has long ceased to take any active part in the cross-Channel traffic; this is now conducted through six ports—Harwich, Dover, Folkestone, Newhaven, Southampton and Weymouth—to which we may perhaps add Tilbury in view of its rapidly expanding vehicular ferry traffic. In these articles, however, we omit Tilbury since its Continental services are designed for goods rather than passengers. The six ports are to be described severally in geographical order, beginning with Harwich and proceeding southwards and westwards to end with Weymouth.

(*To be continued*)

* The author is lecturer in geography Coventry Technical College.

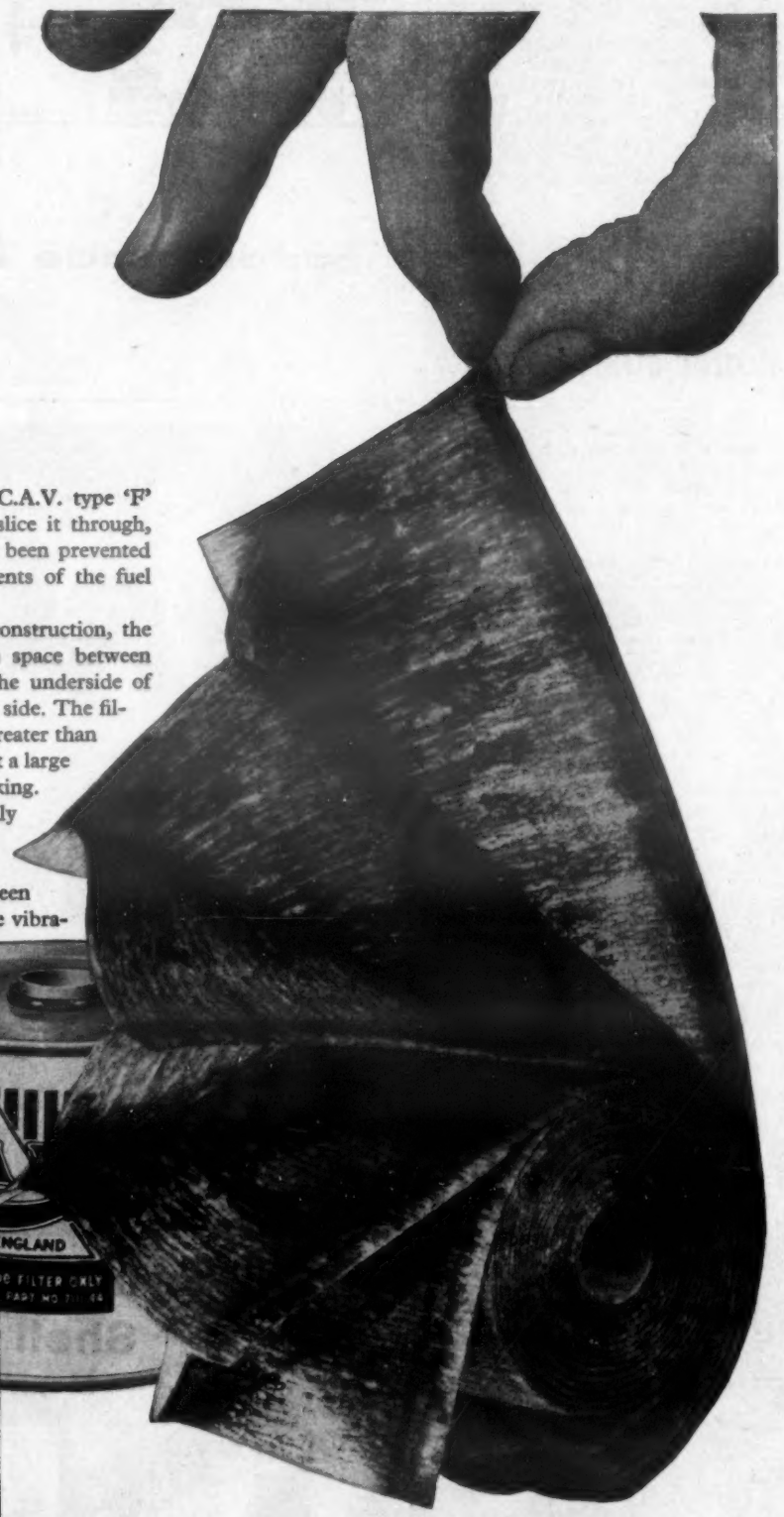
What happens inside?

If you cut the container of a used C.A.V. type 'F' fuel filter, remove the paper element and slice it through, you will see the sludge and dirt which has been prevented from reaching the high precision components of the fuel injection equipment.

The element is of spiral vee-form construction, the paper being crêped to provide continuous space between adjacent turns. Dirty fuel is confined to the underside of the paper coil, and filtered fuel to the upper side. The filtering surface is 560 square inches—much greater than that of other types of comparable size, so that a large volume of fuel can be filtered without choking.

The paper used has been most carefully selected and is specially manufactured for the job. It is resin-treated, and of high strength when wet. Paper elements have been subjected to boiling, low temperature, severe vibration and pressure tests, without harmful effect. Most important of all, the paper effectively removes from fuel oil particles of a size which would cause most damage and wear to pump barrels and plungers.

In laboratory tests the new filter gave *over six times* the life of pump elements obtained with a cloth filter.



C.A.V. type 'F' fuel oil filter

The World's Leading Manufacturers of

FUEL INJECTION EQUIPMENT

C.A.V. LIMITED, ACTON, LONDON, W.3

A P859

AUTOMATIC WARNING CONTROL

(*Continued from page 3*)

Limited, Sheffield; and Turton Bros. and Matthews, Limited, Sheffield. There will be 2,500 electromagnetic track inductors, from Westinghouse Brake and Signal Co., Limited, London, N.1, and 2,500 track inductor ramps, from G. D. Peters and Co., Limited, Slough. There will also be 500 shed test inductors, distributed among Darwins, Wm. Jessop and Sons, Jas. Neill and Co. (Sheffield), Swift Levick and Sons and Turton Bros. and Matthews.

For equipment on locomotives there have been ordered 2,100 receiver magnets, distributed among Darwins, Wm. Jessop and Sons, Jas. Neill and Co. (Sheffield), and Swift Levick and Sons; 2,000 receivers, from Tecalemit, Limited, Plymouth; 2,500 receiver cables and sockets, from G. D. Peters and Co., Limited, Slough; 2,000 driver's control units, from W. R. Sykes Interlocking Signal Co., Limited, London, S.W.4; 2,000 bell plugs and sockets, from Wm. McGeoch and Co., Limited, Birmingham; 2,000 vacuum horns, from Dekko Cameras, Limited, Acton; 2,000 brake valves, 2,000 isolating cocks, 2,000 fuse boxes and 2,000 receiver junction boxes from G. D. Peters; 2,500 rubber pads and bushes, from Geo. Spencer, Moulton and Co., Limited, London, S.W.11; 2,000 relay units and junction boxes (and spare relays), from Telephone Manufacturing Co., Limited, London, S.E.21; 2,000 bells, from Gent and Co., Limited, London, S.W.1; 5,400 electric batteries, from Nife Batteries, Limited, London, S.W.1; 2,000 carriers for receiver armature magnet and 2,000 moulded sealing glands for receiver, from Rendar Instrument, Limited, London, N.17.

Cables

Orders for five-core engine cable are distributed among British Insulated Callender's Cables, Limited, Leigh (Lancs); Pirelli General Cable Works, Limited, London, W.C.2; W. T. Henley's Telegraph Works, Limited, London, E.C.1; Siemens Edison Swan, Limited, London, W.C.2; and Standard Telephones and Cables, Limited, Newport (Mon). Two-core battery and bell cable needs are distributed among Glover and Co., Limited, Manchester, 17; Johnson and Phillips, Limited, London, S.E.7; Enfield Cables, Limited, London, W.C.1; Metropolitan Electric Cable and Construction Co., Limited, Chadwell Heath, Essex; and St. Helens Cable and Rubber Co., Limited, Slough. Kopex conduit is to be supplied by Uni-Tubes, Limited, London, W.1.

Supplies of A.T.C. track apparatus received from the manufacturers in 1958 will be allocated so as to extend the King's Cross to Grantham installation to York, 82¾ miles; to equip the main line from Euston to the north, as far as Blisworth, 62½ miles; and to equip the line between Edinburgh and Glasgow, 47¼ miles. The first supplies of locomotive apparatus will be used to equip some 250 steam locomotives which work into and out of King's Cross. Main locomotive depots will be equipped with a.t.c. testing apparatus (for checking the locomotive equipment) and with battery chargers for the locomotive batteries.

The B.T.C. agreed in 1953 to carry out a scheme which will cost some £20 million on the principal main lines. In the six year period 1957-1962 it will cover: King's Cross to Edinburgh via Newcastle upon Tyne; Euston to Glasgow, with routes to Manchester and Liverpool; Edinburgh to Glasgow via Falkirk; Waterloo to Bournemouth and Exeter; and Liverpool Street to Norwich.

TWO-TIER RAILWAY WAGON

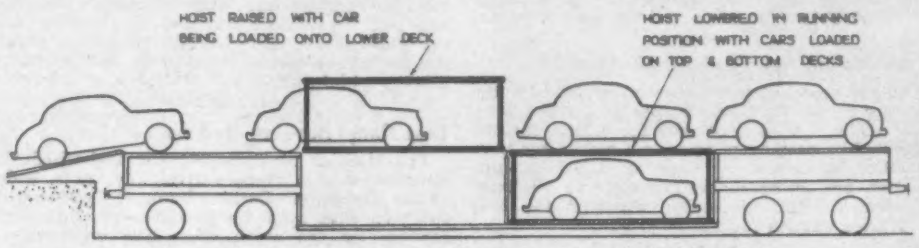
More Economical Movement of Cars

LOADS SIX VEHICLES INSTEAD OF TWO

GREATER economy in the internal transport of cars by rail and in the movement of British cars to the export markets of Europe is possible with a new two-tier car-carrying railway wagon introduced by M.A.T. Transport, Limited. The prototype was developed for M.A.T. Transport by Newton Chambers and Co., Limited, in consultation with British motor manufacturers. The prototype has been thoroughly tested and proved in regular use on British and Continental railways since it went into service in November, and M.A.T. Transport has now ordered a further 12 wagons.

The idea of making a car-carrying railway wagon similar in principle to the two-tier road transporters now widely used in this country is not new. Such wagons have been in use on American and some European railways for some years and have been suggested for use in Britain many times. But until recently it has generally been regarded as impracticable, largely because of the restricted heights and width of the railway loading gauge in this country.

M.A.T. Transport is an official agent of the British Railways Continental freight services and the company was therefore anxious to have a wagon capable of carrying the maximum number of cars suitable not only for the restricted British loading gauge but also for operation on all European railway systems. It was with these requirements in mind that Newton Chambers developed the present design, which complies fully with British Railways requirements as to running gear and has also been passed by the Wagon Standards Committee as complying with R.I.V. regulations and is therefore suitable for running in the Continent of Europe.


HOIST RAISED WITH CAR BEING LOADED ONTO LOWER DECK
HOIST LOWERED IN RUNNING POSITION WITH CARS LOADED ON TOP & BOTTOM DECKS

Diagrammatic arrangement of the wagon and method of loading

The M.A.T. wagon uses a well frame supported on two four-wheel bogies. It measures 60 ft. 8½ in. long over the buffers and can accommodate a total load of 10 tons in the modest tare weight of 25 tons. It can negotiate curves of 70-ft. radius and is suitable for speeds of up to 70 m.p.h. Fully automatic Westinghouse compressed-air brakes are fitted to all wheels and a through pipe is fitted for vacuum brakes. Provision is made for the ready fitting of vacuum brake cylinders should these be required.

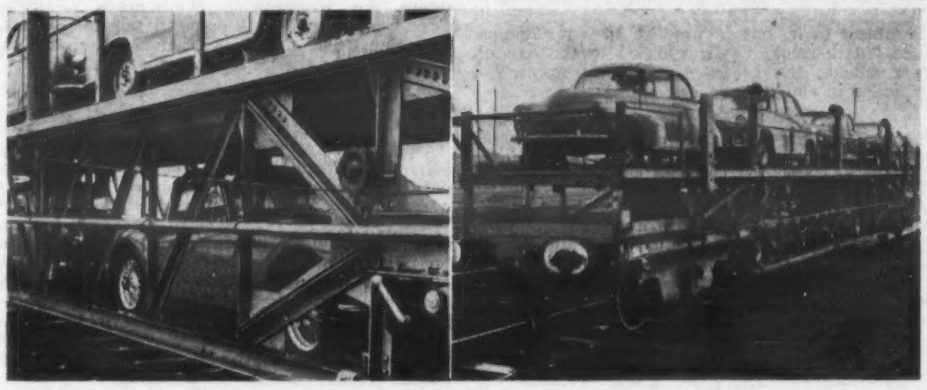
Platform Hoists

Loading is arranged in two tiers, one in the well to accommodate two cars and the upper deck to take four cars of average size or five very small cars. The main feature of the wagon is the use of two platform hoists to form the centre portion. With the hoists in the travelling position, there is a continuous flush deck from one end to the other. When raised, the top and bottom decks move together in the form of an open-ended box so that the lower floor lines up with the top deck for the car to be driven or pushed into position in the hoist, which is then lowered into the travelling position. Thus, all loading and unloading is carried out from the top deck by means of loading ramps positioned at either end of the wagon.

Largest Cars Carried

After loading in the hoists, the cars are secured by special chocks and fastenings before lowering, so that the operator has plenty of space in which to work. In the lowered position, the platform is carried on the wagon framework, thus relieving the hoist cables of any load. The height of the top deck is such that the largest saloon cars can be carried inside existing loading gauge limits. The two hoists are independently operated by hand winches. A car can be raised from the well to the unloading position by two men in about six minutes.

The possibility of using power-operated winches is now being studied by the Newton Chambers company and another possible development is the use of full sheeting over the wagon to give full protection from the weather. The company has applied for patents on certain features of the design both in this country and in the Union of South Africa.

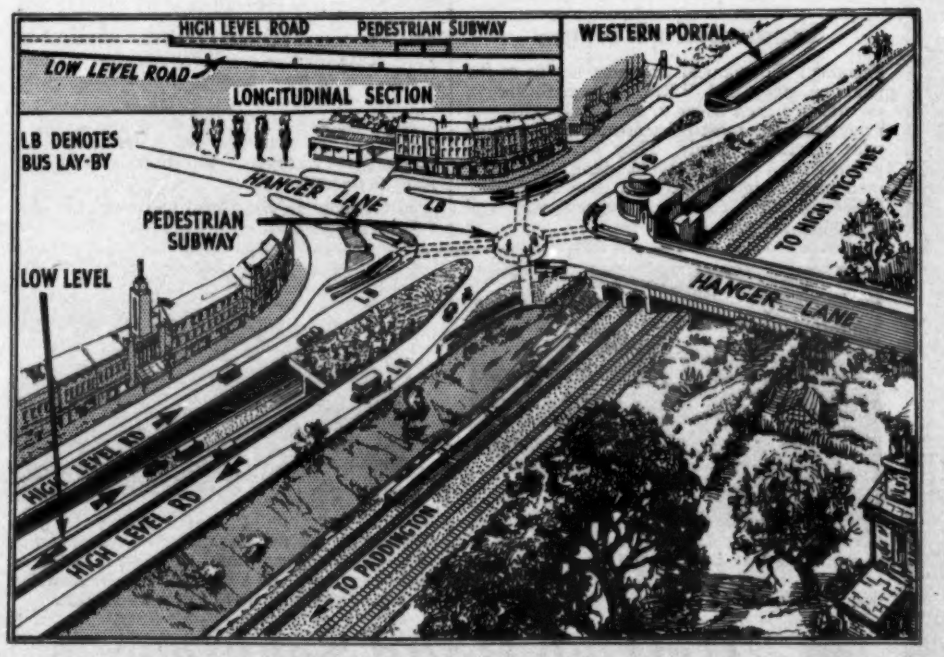


Close-up of the side of the wagon showing hoist pulleys and Westinghouse dual brake lever for goods or passenger-train working; right, a chocked loaded wagon

Prototype In Service

Since being brought into regular use, the prototype has been taking loads of cars from the Cowley works of the British Motor Corporation to Cologne by the Harwich—Zeebrugge train ferry of B.R. Eastern Region. German cars for Britain have formed a return load. At one point in the journey to the coast the wagon traversed the London area, using the Metropolitan Line. Here the loading gauge, with 12 ft. 8 in. maximum height, is less than normal in this country, but the design had been completed to meet such usage and so no difficulty was experienced. Indeed, there was no trouble in the early months of regular service and the prototype has not required any modifications. The further 12 wagons will be produced to the same design.

There have been general indications that the business of carrying motor cars and similar vehicles by rail is increasing. Motorists faced with long journeys—say from London to Scotland—are being invited to put their cars on the railway and to travel comfortably in the same train. So far, old converted passenger coaches are used for transporting the cars. Given an efficient service, there is no doubt that as the roads become more congested—and unfortunately this seems inevitable—use of the cars-by-rail service will increase proportionately.



This is how the £650,000 underpass at the intersection of Western Avenue and Hanger Lane, North Ealing, will look when completed. The underpass and the slip roads in Western Avenue will both have two lanes in either direction. By removing much of the traffic from the surface it has been possible to retain bus stops close to the intersection and its public subways

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The G.E.C. Traction Department will be pleased to supply details of the wide range of Electric Traction Equipment to all concerned with schemes for future development.

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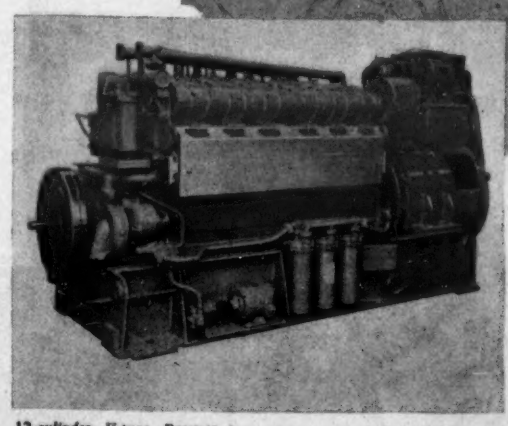
THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2

PAXMAN DIESELS FOR THE WORLD'S RAILWAYS

Ten 1,000 h.p. twin-engined diesel-electric locomotives in NEW SOUTH WALES



12-cylinder V-type Paxman diesel-electric unit, 500 b.h.p. at 1250 r.p.m.

These 80-ton Bo-Bo diesel-electric locomotives supplied by B.T.H. and each powered by two Paxman 500 b.h.p. V-type engines, which went into service on the NEW SOUTH WALES GOVERNMENT RAILWAYS between the end of 1953 and March, 1954, have been almost entirely used on freight transfer duty in the Sydney area. As a general rule the locomotives are on 24-hour per day service, on a 40-hour roster, following which they go into depot for periods varying between two hours and a full eight-hour shift, for inspection, light maintenance and refuelling. On this roster it has been shown that the work of one of these diesel locomotives equals the amount done by three 2-8-0 steam locomotives.

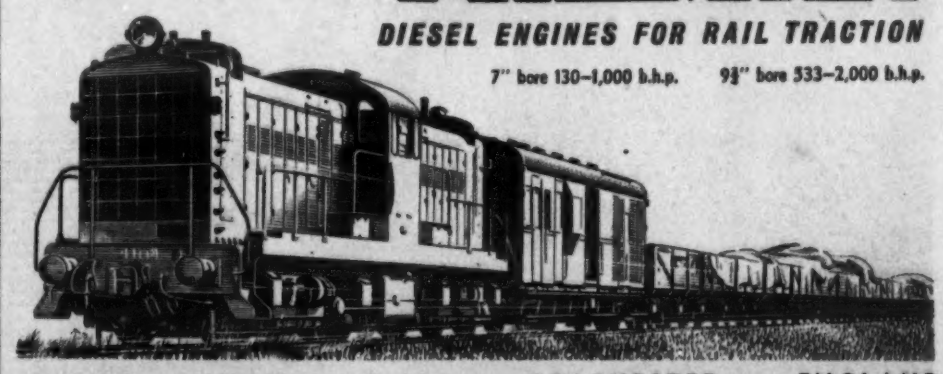
The whole of the 130-2,000 h.p. range of Paxman diesel engines is contained in two series, each with a common bore and stroke. Such standardisation enables Railways to achieve big savings in maintenance expenditure and spares storage space. Many of the wearing parts of each engine are common to the particular range. Another great advantage offered by Paxman engines is their high power/weight ratio. This is of particular interest to locomotive and railcar manufacturers faced with severe axle load limitations.

One of the Paxman-engined BTH Locomotives hauling freight in the Sydney area.

PAXMAN

DIESEL ENGINES FOR RAIL TRACTION

7" bore 130–1,000 b.h.p. 9½" bore 333–2,000 b.h.p.



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YOU needn't work out rock-bottom transport costs..

WE'VE DONE IT FOR YOU!

Up at Leyland, we've got operating economics cut-and-dried. To start with, Leyland trucks sell at keenly competitive prices because our unequalled experience, resources and production methods enable us to pass big economies to our customers.

Then take maintenance! Customers rarely find it necessary to open up the engine under 250,000 miles . . . some have touched the half million mark . . . and the entire chassis conforms to that same hall-mark of reliability.

Again, fifteen years or more of hard service find a Leyland operating with the same zest as when it left the assembly line.

And, of course, Leyland fuel economy is traditional.

There's bound to be a Leyland to suit your job. Ask your dealer for details and a quotation.

The 7-8 ton 'Comet' is the world's most popular cruiser-weight truck, with fuel consumption figures ranging from 16-20 m.p.g.

Leyland 'Beaver' (9½ tons payload) is largely used for trailer work, with a gross train rating of 24 tons.

Also widely employed for trailer work, the 'Hippo' 6-wheeler carries about 14 tons payload. The gross train rating is 32 tons.

The Leyland heavyweight is the 24-ton gross 'Octupus' 8-wheeler. Probably the most popular 8-wheeler made . . . certainly the most economical to operate.

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NEWS FROM ALL QUARTERS

Aberdeen Trams End on May 4

Aberdeen Corporation trams will cease as from May 4. The last route, Bridge of Don—Bridge of Dee, will be replaced by buses on that date. A farewell ceremony is being arranged.

Mechanical Handling Exhibition

The 1958 Mechanical Handling Exhibition and Materials Handling Convention at Earls Court from May 7-17 will, it is expected, again be the largest display of labour-aiding equipment and methods ever presented to the world.

Fuel Prices Down

A reduction of ½d. per gallon in the price of all grades of petrol was announced by the major distributors this week, together with a reduction of ½d. per gallon in the price of diesel fuel oil. The last two price reductions evidence a tendency for diesel and petrol prices to draw closer together.

Push Button Gas Radiators in Stations

The Western Region is experimenting with the heating of waiting rooms by gas fires operated by the public. A modern gas fire which can be operated by passengers pressing a button has been installed in the waiting room at High Wycombe Station and other stations are to be similarly equipped. The push button turns on the heat and gives warmth for about 30 min.

Great North Road Improvement

As part of the general improvement of the Great North Road, work is about to start on a scheme to modernise a section 2½ miles long between Buckden railway bridge and Ellington Brook, Brampton, in Huntingdonshire. A second carriageway, 24 ft. wide, will be built for the south-bound traffic and the existing carriageway will be improved and used for north-bound traffic.

Dark Smoke to be an Offence

As from June 1 it will be an offence, with fines up to £100, to emit dark smoke from chimneys of factories, shops and offices, and the funnels of ships and railway engines. House chimneys will be subject to it, but in practice they rarely produce "dark smoke." In addition to the ban on dark smoke, the Clean Air Act will require a reduction in emissions of grit and dust.

Severn Lighterage Company for B.T.C.

British Transport Waterways has purchased the business and goodwill of B. and M. Cooke (Gloucester), Limited, a lighterage company operating on the River Severn and the Gloucester and Sharpness Canal. By this acquisition and by the construction of new craft, it will have a total carrying fleet of 40 powered and non-powered vessels on these waterways, enabling a more economic and more flexible use of craft which should greatly improve the carrying facilities available for traders on this important water route to the Midlands, which is now being improved.

Clyde Piers Find No Buyers

There were no bids for Kilcreggan and Cove piers, on the Clyde, when they came up for sale recently and the sale was adjourned. Kilcreggan pier is still in use; Cove was closed before the 1939-45 war.

British Railways Office in Belfast

A newly converted office of British Railways at 24 Donegal Place, Belfast, has been brought into use. Conversion was designed additionally to allow the use of contemporary advertising displays and to provide more circulation space for the public at peak periods.

Oldest C.N.R. Passenger Locomotive

The oldest passenger locomotive in operation on the Canadian National Railway has been retired after 52 years' service. Pacific locomotive No. 5529 was built by Montreal Locomotive Works, was the giant of her day, but the diesel has sealed the fate of all steam locomotives and No. 5529 is being withdrawn.

East Ham—Barking By-Pass

The Minister of Transport has authorised the construction of a second carriageway, 30 ft. wide, on the East Ham—Barking by-pass, together with two 9-ft. wide cycle tracks and a new 6-ft. wide footway on the south side. The improvement extends for a length of 1.7 miles between Prince Regents Lane, West Ham, and the East Ham—Barking boundary, at which point it joins the existing double carriageway in the borough of Barking.

Canadian Diesel Manning Report

The Royal Commission which held hearings on the Canadian Pacific Railway diesel manning dispute has recommended that firemen are not necessary on the company's freight and yard diesels. The Canadian Pacific Railway has stated it would accept the recommendation. The Commission reviewed the situation in detail and examined the position in other countries. It finds that neither safety nor mechanical requirements justify a second man on diesels engaged on this type of operation. The Canadian National Railway was not a party to the dispute nor the inquiry.

Edinburgh Suburban Railcar Services

Diesel railcars were introduced on Edinburgh suburban railway lines on February 3. On that date they began between Corstorphine, Waverley and North Berwick and shortly will be operating Waverley—Peebles—Galashiels. As soon as possible is it proposed to provide this type of service on the Corstorphine—Waverley—Outer Circle—Waverley—Rosewell—Corstorphine route and on the line Musselburgh—Waverley—Inner Circle—Waverley—Musselburgh, to be followed by railcars between Edinburgh Princes Street, Dalry Road, Murrayfield, Craigleith, East Pilton, Granton Road, Newhaven and Leith North.

How economical is YOUR transport?

With co-operation, wise planning and reliable, efficient transport, BRITISH ROAD SERVICES help you to keep down costs.

TRANSPORT TODAY — with all its ramifications — can form a very important item in a company's costs. B.R.S. realise this and strive to see that you receive real value for the money you spend with them. Real value is service and reliability, which they set out to provide through their unrivalled nation-wide facilities. They co-operate fully to obtain for you your full money's worth, *for they believe in service.*

Economical advantages

Planning: Economical transport begins at the planning stage and B.R.S. have enthusiastic, experienced men eager to co-operate with you in devising the most efficient means of moving your particular goods. They will advise on palletisation, mechanical handling and other modern techniques, and with their up-to-date knowledge they can often suggest very real economies for you.

Vehicles: B.R.S., with its vast resources and its huge fleet of many different types of vehicle, is able to provide the most suitable and economical vehicles for your load or, if need be, they will adapt existing ones, or build new ones to suit your particular purposes.

Precautions: No practical security measure is overlooked, and careful precautions are taken to safeguard perishable or valuable goods. The 24-hour engineering service — on call all over Britain — ensures that all equipment is kept in tip-top condition by planned preventive maintenance. B.R.S. aim at reliable services for you and safety for the public.

Behind the scenes: A teleprinter network links all B.R.S. depots throughout Britain and speeds communications. Special instructions are passed over it to ensure that your needs — and those of your customers — are properly cared for. B.R.S. realise how valuable customers are — to you and to them.

All these advantages, and many more, enable B.R.S. to provide you with reliable, fast, economical transport, transport that *really* justifies its cost.

Just telephone your local man — action will follow immediately.

Dependable, fast service. From hundreds of B.R.S. depots throughout the British Isles, thousands of vehicles set out regularly every night with loads for distant destinations. Are you using these services?

Most suitable vehicle. This articulated vehicle carries a load of 15/16 tons. Whilst the trailer is loading or unloading, the tractor can be busy elsewhere, helping B.R.S. to give good service at reasonable cost.

British Road Services

Look up your nearest depot in your local telephone directory

COMMERCIAL AVIATION

B.E.A. and Cambrian

BARCELONA CALLS BY B.O.A.C.

IT was announced on February 7 that British European Airways had acquired a minority interest in Cambrian Airways, the Welsh airline. Mr. S. Kenneth Davies, chairman of the Welsh Advisory Council for Civil Aviation and a member of the board of B.E.A., said British European Airways and Cambrian Airways were pleased to announce that British European Airways had decided to acquire a minority interest in Cambrian Airways. This followed the operating agreement entered into between the two undertakings two years ago. The operating agreement had developed to a point where British European Airways represented Cambrian interests at Belfast, Liverpool, Manchester, Guernsey and Jersey. Cambrian now operated a twice-daily service Cardiff—Bristol—Manchester which not only linked the three cities but also acted as a feeder to B.E.A. services operating from Manchester. The British European Airways decision recognised the spirit of co-operation which had developed under the operating agreement, and should further cement the close relationship already existing. British European Airways would be represented on the Cambrian Airways board by Sir Arnold Overton, a B.E.A. board member, and Mr. P. C. F. Lawton, its commercial and sales director.

London—Paris Coach-Air-Rail

Revised transport arrangements were announced by Silver City Airways this week for the resumption on May 21 of low-fare coach-air-rail services between London and Paris. Instead of two 44-seat services daily, as in 1957, there will be a single service this year with capacity for 100 people in each direction. For the road journey from Victoria to Lydd Airport the 100 passengers will be accommodated in three coaches, travelling in convoy. For the 20-minute flight to Le Touquet Silver City will use two air liners, flying five minutes apart. And for the final section from Etaples to Paris there will be one fast diesel railcar. One of the two aircraft on the Silver Arrow service will be Silver City's first Super-Wayfarer, a 56-passenger conversion of the Bristol 170 Mk 32.

B.O.A.C. to Call at Barcelona

The British Overseas Airways Corporation plans to link Barcelona with Kano, Accra and Lagos, when new services are introduced at the beginning of March. Two services a week will call at Barcelona. Both will be routed London—Barcelona—Kano, and one will terminate at Accra and the other at Lagos. The frequency of the service will be increased to four a week in April. The service is being operated by Stratocruisers. The corporation has secured full traffic rights in both directions between West Africa and Barcelona, but only traffic originating in West Africa may pass through Barcelona en route for London, although a 30-day stopover period is allowed in Barcelona on the northbound journey. No traffic terminating in Barcelona may be carried from London, and there are no stopover facilities southbound.

Britannias at Nairobi

When the new Nairobi airport at Embakasi is opened on March 8, Britannias of the British Overseas Airways Corporation will serve Nairobi on an all-the-year-round schedule. The three weekly Britannia services between London and Johannesburg will from that date start to use Embakasi instead of Entebbe and the seven Argonaut services a week which previously used Eastleigh Airport, Nairobi, will thenceforward use Embakasi. Services are to be increased in April when 10 Argonauts and four Britannias a week will link Nairobi with the United Kingdom, in addition to the three DC7B services of South African Airways. The Britannias will operate in a mixed class configuration with 20 first-class seats and 48 tourist seats. Medium-range Britannia 102s will operate on this route until the end of July, when they will be replaced by the long-range Britannia 312s which B.O.A.C. at present operates on a transatlantic service between London and New York. The London—Aden service is again being operated by Britannias, after a short withdrawal for engineering modifications to be carried out. The service operates once a week, with 24 first-class slumber seats and 30 tourist seats.

British Traffic in August

United Kingdom airlines operated 15.5 per cent more capacity ton miles on scheduled services during August, 1957, than in the previous August, and total traffic carried rose by 14.8 per cent; 600,417 passengers were carried and these passengers travelled 289 million passenger miles, both figures representing an increase of 17 per cent compared with August, 1956. The overall load factor, however, fell from 65.6 to 65.2 per cent. B.O.A.C. offered 16.7 per cent more capacity on scheduled services during the five-week period ended August 31, in comparison with the corresponding period of 1956; capacity ton miles on western services went up by 28.4 and on eastern services by 10.9 per cent. Total traffic carried rose by 14.1 per cent, that on western routes increasing by 32.8 and that on eastern routes by 5.5 per cent; 28,668 passengers, or 62.1 per cent more, were carried by the corporation on western services and 23,487 passengers, or 13.2 per cent more, were flown on eastern services. The greater increases in traffic in the western area reflect the operation of new and larger aircraft, coupled with increased frequencies. B.E.A. provided 16.7 per cent more capacity ton-miles on scheduled services during August, 1957, than in August, 1956, international capacity showing an increase of 16 per cent and domestic capacity an increase of 18.6 per cent. Total traffic carried rose by 19.5 per cent on international services and by 14.9 per cent on domestic services; 402,573 passengers, or 17 per cent more, travelled on B.E.A. routes and these passengers were flown 130 million passenger miles, or 20.2 per cent more than in August, 1956. The overall load factor went up from 67.5 to 68.4 per cent. The independent companies operating in association with the corporations offered 13.4 per cent more capacity ton miles on scheduled services in August, 1957, compared with August, 1956; international capacity increased by 11.9 per cent and domestic capacity by 18.7 per cent. Total traffic carried went up by 15.7 per cent on international services and by 19.7 per cent on domestic services. Freight traffic rose by 15 per cent; 96,636 passengers were carried on international routes, or 15.5 per cent more, and 55,580 passengers travelled on domestic routes, or 9.7 per cent more. The overall load factor rose from 67.3 to 69.2 per cent.

EASTERN REGION MANAGEMENT

C. K. Bird.

Mr. CHARLES K. BIRD, C.B.E., M.Inst.T.

• • • • • •

Retirement on January 31, due to ill-health, of Mr. Charles Kellam Bird from general managership of the Eastern Region of British Railways had already been foreshadowed in MODERN TRANSPORT. His occupancy of that office under various titles since his appointment in 1947 as chief regional officer has seen marked progress in many fields of railway practice but particularly in the carrying out of the modernisation scheme. Even before the present modernisation programme the Eastern Region had seized upon the benefits of reshaped regular-headway timetables in making economies of engines and sets of enginemen and had embarked upon electrification projects which have since been expanded. The Eastern Region was also in the van with decentralisation of its management and the introduction of a "traffic" organisation. Educated at King's School, Grantham, and St. John's College, Cambridge, he served during the 1914-18 war with the Honourable Artillery Company and the Royal Artillery. He began his railway career with the former North Eastern Railway in 1922 and, in 1926 was appointed chief staff clerk to the district superintendent, Leeds, L.N.E.R. In 1928 Mr. Bird transferred in a similar capacity to Middlesbrough, and in the same year moved to the rates office at York. In 1929 he was appointed head of the rates and statistics section, chief general manager's office and three years later became responsible to the chief general manager also for Parliamentary matters. In 1934 Mr. Bird was appointed assistant goods manager (Southern Area) and he retained that post until, early in 1943, he was appointed acting goods manager (Southern Area), in which position he was confirmed in April, 1945. He became acting divisional general manager (Southern Area) in 1947 and later that year was appointed chief regional officer, Eastern Region. This position was renamed chief regional manager in 1953 and he was appointed general manager, on January 1, 1955. Awarded the C.B.E. in last year's Birthday Honours, Mr. Bird has always paid special regard to the philosophical and humanistic aspects of life in general and railway work in particular as evidenced in his presidential address to the Railway Students Association in October, 1951.

IN PARLIAMENT

Mayfair Parking Meter Order

HEATERS IN LORRY CABS

THE Minister of Transport has decided to accept the reports of his inspector and of the London and Home Counties Traffic Advisory Committee on the parking meter scheme for the north-western area of Mayfair and hopes to make the necessary order to authorise it as soon as certain recommended modifications have been considered. Thereafter a period of three months will ensue before Westminster City Council can proceed with the scheme. There will be an opportunity to debate the order in the House of Commons.

Area Board Salaries Unchanged

MR. ERNEST DAVIES was told by MR. G. R. H. NUGENT, Joint Parliamentary Secretary, M.o.T., that the total amount paid in fees to members of B.T.C. area boards in 1957 was substantially the same as in 1956. The scale of fees has not changed since the boards were set up.

Heaters in Lorry Cabs

SIR FRANK MEDLICOTT wanted the Minister of Transport to introduce regulations make it compulsory from a future date to fix heaters in the cabs of lorries. MR. G. R. H. NUGENT said this could better be dealt with by negotiations rather than by regulations.

Fuel Tax Bill for P.S.V.s

In response to a question on the incidence of fuel oil tax, the Chancellor of the Exchequer, MR. HEATHCOAT AMORY said that revenue in 1957 from heavy hydro-carbon oil used as road fuel was about £65 million, nearly half of it from oil used in buses and other public passenger service vehicles. He had received representations from and on behalf of omnibus companies on these matters, which he promised to bear in mind, together with other relevant factors, in his general review of taxation before the Budget.

Outside Interests of B.T.C. Board Members

MR. S. T. SWINGLER wanted legislation to make it a condition of membership of the nationalised transport boards that other directorships and appointments be relinquished. The Government, he said, should assent to this as it had referred the position of part-time directors of the Bank of England to the Radcliffe Committee. MR. A. S. NEAVE, Joint Parliamentary Secretary, M.o.T., said the practice referred to had been followed concerning outside directorships since 1953. MR. D. JONES asked was he aware that the six part-time members of the British Transport Commission held 32 other directorships between them, and that many of the firms of which they were directors made equipment of which the B.T.C. was a substantial purchaser? What did he propose to do about it? Mr. Neave said every case was treated on its merits.

Forthcoming Events

February 15.—Omnibus Society (Northern). Paper by Mr. R. P. Doig, "Bus Operation in the Kingdom of Fife." At Y.M.C.A., Blackett Street, Newcastle upon Tyne. 6.30 p.m.

Railway Enthusiasts Club. Paper by Mr. H. A. Vallance, "The London and Southampton Railway." At Club Room, Farnborough (Hants). 7 p.m.

February 17.—Permanent Way Institution (London). Paper by Mr. K. Brinsmead, "Where do we go from here?" At 222 Marylebone Road, N.W.1. 6.30 p.m.

Institute of Road Transport Engineers (Scottish). Paper by Mr. R. H. R. Hacker, "The Adaptation of Commercial Vehicles for use in a Special Purpose Mixed Fleet." At North British Hotel, Edinburgh. 7.30 p.m.

Railway Correspondence and Travel Society (Merseyside). Paper by Mr. J. A. Patmore, "Origins and Personalities." At Woodside Hotel, Birkenhead. 7.30 p.m.

February 18.—Institute of Transport (Humberside). Paper by Mr. Charles F. Klapper, "European Transport." At Chamber of Commerce and Shipping, Hull. 7.30 p.m.

Institute of Transport (Scottish). Paper by Mr. R. G. Grout, "British Shipping." At 46 Bath Street, Glasgow. 6 p.m.

Institute of Transport (Birmingham G. and S.) Paper by Mr. H. L. Brown, "The St. Lawrence Seaway." At Exchange and Engineering Centre, Stephenson Place, Birmingham, 2. 6.45 p.m.

Institute of Transport (York G. and S.). Paper by Mr. K. E. Thurgood, "The Modernisation of B.R. Goods Terminals." At Room 33, Railway H.Q. Offices, Toft Green, York. 7 p.m

Institute of Transport (Metropolitan G. and S.) Paper by Mr. L. N. Morton, "The Present and Future Commercial Value of Inland Water Transport." At 80 Portland Place, W.1. 5.45 p.m.

Institute of Road Transport Engineers (North Eastern). Paper by Mr. C. G. Tresider, "Some Considerations Affecting the Selection of use of Fuels and Lubricants for Road Transport." At Three Tuns Hotel, Durham City. 7 p.m.

Industrial Transport Association (London). Paper by Mr. Otto Tope, "Accident-Causing and Accident-Aggravating Automobile Design." At Royal Society of Arts, John Adam Street, W.C.2. 6.30 p.m.

Institute of Traffic Administration (East Midlands). Paper by Mr. J. Trundle, "Staff and Public Relations in Transport." At Victoria Station Hotel, Nottingham. 7.30 p.m.

February 19.—Institute of Transport (Beds, Cambs and Hunts). Paper by Mr. R. B. Brittain, "Some Awkward Jobs." At Owen Webb House, Cambridge. 6.45 p.m.

Institute of Transport (South Wales and Mon). Annual dinner and visit of president. At Royal Hotel, Cardiff. 7.30 p.m.

Railway Students Association. Paper by Mr. T. M. Herbert, "Railway Research." At London School of Economics, Houghton Street, W.C.2. 6.15 p.m.

Railway Correspondence and Travel Society (Lancs and North West). Paper by Mr. R. Dyer, "West Country Wanderings." At All Saints Rectory, Droylesden Road, Manchester, 10. 7 p.m

February 20.—Institute of Transport (Northern Ireland). Film display. At 21 Linen Hall Street, Belfast. 6 p.m.

Institute of Transport (Swindon). Paper by Mr. E. G. A. Singleton, "Road Passenger Transport." At Town Hall, Swindon. 7.45 p.m.

Institute of Road Transport Engineers (Metropolitan). Paper by Mr. B. C. Lovatt, "The Free Piston Gasifyer with special reference to Vehicle Applications." At Royal Society of Arts, John Adam Street, W.C.2. 6.30 p.m.

Institute of Road Transport Engineers (Yorkshire). Paper by Mr. W. A. Kirk, "Air Brakes and Auxiliaries for Commercial Vehicles." At Great Northern Hotel, Wellington Street, Leeds, 1. 7.30 p.m.

British Railways (Western Region) London Lecture and Debating Society. Paper by Mr. S. C. Harvey, "Selling Transport in the New Railway Age." At H.Q. Staff Dining Club, Bishops Bridge Road, W.C.2. 5.45 p.m.

February 21.—Institute of Transport (Tees-side). Debate, "That the Transport Facilities on Tees-side are not keeping pace with the Development of the Area." At Cleveland Scientific and Technical Institution, Middlesbrough. 7 p.m.

Institute of Traffic Administration (Manchester). Dinner and dance at Cafe Royal, Manchester. 7 p.m.

Institute of Navigation. Paper by Air Commodore R. T. Gething, "Air Search and Rescue Problems." At Royal Geographical Society, 1 Kensington Gore, S.W.7. 5.15 p.m.

Railway Correspondence and Travel Society (Lancs and North-West). Paper by Mr. R. Redmond, "Signalling and Traffic." At D.O.S. Conference Room, Preston Station. 7 p.m.

Light Railway Transport League. Paper by Mr. M. N. Forbes, "An American Tour." At Laycocks Rooms, Kirkgate, Bradford. 7 p.m.

March 13-23.—International Motor Show at Geneva.

March 21.—Institute of Transport. Annual dinner. At Dorchester Hotel, W.1.

April 15-18.—Scottish Road Passenger Transport Association. Annual Conference. At Turnberry.

May 13-15.—Public Transport Association. Annual Conference. At Harrogate.

June 3-6.—Institute of Transport. Congress. In Dublin.

September 26-October 4.—Commercial Motor Transport Exhibition. At Earls Court.

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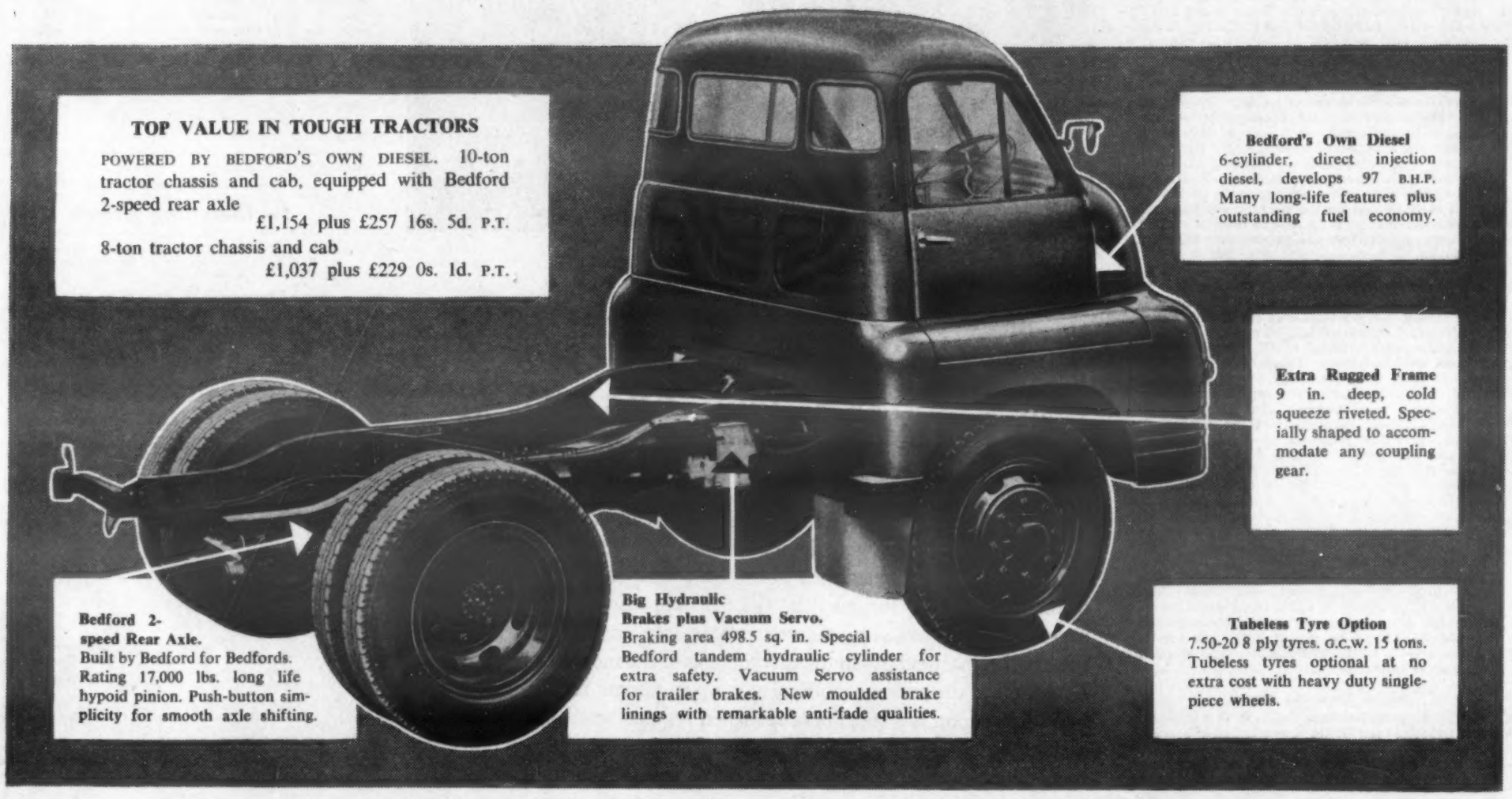
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RAILWAY MANAGEMENT

*Organisation to Meet Conditions (Cont.)**

By E. W. ARKLE, M.Inst.T., Director of Traffic Services, London Midland Region, British Railways

WE now have an operating manager equipped with a full knowledge of his rules, his territory and his men, and someone might well say that we could now let him get on with his management as best he can. Indeed past practice has often done so. However present-day researches have some shocks in store for this branch of the industry, as indeed for most of them. It is true that there has for many years been a certain amount of statistical information available to the operator, but it has on the whole been rather sketchy in character. It would be impossible here to go through all the voluminous information which has been fed to the operating officer of the past and present or to describe the treatises and courses which have been devoted to the subject by such people at T. B. Hare over a long period of years. But an apt illustration can be provided from marshalling yard statistics. As at present constituted these concentrate on the number of wagons detached in a given period and the cost of doing so.

Commercial Aspect of Operating

Obviously this is a useful thing for a yard-master to know, but so far as I am aware not a great deal has been said about the necessity for wagons to be detached in a given yard at all, or indeed about the service given by any yard to the wagons passing through it, i.e. how long they spend there and how far they are projected forward when they leave, though I am aware that these matters have been covered by special inquiries such as those of the shunting analysis committees. In other words our statistics in the past have been a useful domestic exercise but have borne little or no relation to the performance as viewed by the customer whose goods are in the wagons and who ultimately pays our salaries. Much thought and care are now being devoted to this commercial aspect of operating information.

Again, no great attention has been paid in the past to the figure of average wagon load though it has, of course, been in regular production for years. Only now, and largely as a result of the emergence of railway traffic costing as a service, forced on us if you like by the experience of competing road operators, is it coming to be realised that the payload in the wagon is about the most fundamental freight statistic we have, forming in fact the basis of the whole of our new charging arrangements.

Passenger Information

On the passenger side, too, there are many serious gaps in our knowledge and though much information is ground out at heavy cost it produces little or nothing on which really effective action can be taken. There is, for example, no reliable information on passenger-miles or revenue earned on particular stretches of line, by particular trains or even particular seats. Again we know that a great deal of time and energy is being devoted to remedying this state of affairs with the help of modern booking and accountancy methods and even electronic computors.

To sum up, therefore, the operating manager of the future will need to be more scientific than his predecessor and he will have many aids to assist him in becoming so. But even more significant is the fact that he will also have to direct his mind more towards commercial problems, just as his commercial colleague will have to know more about the "working" side of the railway if he is to make his full contribution to the future prosperity of the industry he serves.

Commercial Manager

Clearly, the commercial manager of the future will need all that his operating colleague requires in the way of knowledge of his personnel if he is to achieve satisfactory administration, be he goods agent or chief officer. Also the better he knows his territory the better he will do his job, but with the important distinction that he will substitute road systems and their principal users and his traders and his passengers for the signal-boxes, sidings and yards of his operating colleague. For this reason some travel by road is a better thing for a commercial man than it may be for some of his colleagues. On the documentary side he will have to immerse himself in even more literature than is involved in a study of rules and regulations—so much so in fact that many steps are being taken to reduce and simplify the body of such documents.

But in addition to all this it will clearly be impossible for any manager of the future who is in touch with the railway customers to do without a sound knowledge of the working methods of his system, seeing that the whole of the freight charging arrangements, and therefore the bulk of his earning power, are dependent upon the most economical use of the equipment available. This is not the place to embark upon a description of the workings of the new traffic costing service which is already playing a vital part in the daily life of the commercial and other departments, but their findings can, I suppose, be summarised rather like this—that the more a wagon can carry and the further it goes without being handled or "broken up," the cheaper the resultant service.

Motive Power

Perhaps I have said enough to show one thing clearly for all to see, without detailing the needs of the third partner in traffic—the motive power department, who equally will have much to learn as their units become so much more expensive to purchase and must therefore be run with the greatest possible intensity; that is that the future lies with "traffic" in the widest sense rather than with operating, commercial or motive power taken individually. To quote but one example, the reorganisation of the L.M. Region now beginning to take shape, clearly bears this stamp of universality, though it must be admitted that it is so far confined to the three traffic departments. Of 10 divisional traffic managers and their assistants, already appointed, four have a mainly operating background, three commercial and three motive power, but the teams are mixed and it will not be long before they find themselves hotly engaged in the battle for net revenue, with the dual responsibility of cutting the costs and increasing the receipts of their respective areas.

It may be remarked that this is no more than the swing of the pendulum and that just as only a few years ago we seemed to be going in for more and more specialists, starting with passenger managers carved out of superintendents of the line, and going on to create a profusion of staff officers, welfare officers, costings officers and so forth, so we will return to a division of operating and commercial and possibly motive power. I doubt it very much. There are two good reasons for my doubts—firstly that this new outlook is the result of circumstances so compelling as to admit of no alternative—I mean the violent and growing competition of road transport, whose methods we are in fact emulating whether we like it or not; and secondly the fact that after a few years the set-up will be so firmly established and the staff carrying it on so trained and educated that any reversal of the process will be seen to be foolish as well as costly.

L.M. Organisation

The London Midland way of giving recognition to the need for a traffic outlook is fairly typical, though the titles and the territory allocated differ somewhat. The Region is a great deal smaller than the former L.M.S. Railway, after the lopping off of the whole of Scotland and now large sections of the Midland line north of a point near Chesterfield and to the south-west of Birmingham. The portions added to it are very much smaller in importance, consisting mainly of the old G.C.R. south of Heath and including Marylebone and that portion of the Manchester and Sheffield electric line west of Woodhead Tunnel. However, it has been thought desirable to split what remains (and which is quite large enough) into six divisions located at Barrow, Manchester, Liverpool, Nottingham, Birmingham and London, these having been selected as the largest business communities and centres of trade in each division. Each of the new traffic managers will co-ordinate the traffic work in his division and, in fact, regard the getting of business, especially viewed as *net* revenue, as his prime function. His staff will not be large—perhaps up to 40 or so at the most and all the detailed work will be carried on through the existing district officers, commercial, operating and motive power, who themselves will be co-ordinated and given uniform stretches of territory wherever possible.

One of the great drawbacks of the existing situation is that the officers of the three departments have little or no co-ordination of boundaries and in one extreme case a single commercial officer has to carry on the work of his district in daily contact with no fewer than eight different operating colleagues. It is difficult for a team spirit to exist in such circumstances and full advantage will be taken of the present rather considerable changes to get rid of these anomalies. The divisional managers will thus have every opportunity of building up a strong esprit-de-corps amongst their officers and this will later be strengthened by the provision of publicity and costings services, the latter with the ultimate aim of achieving a degree of internal accountability for each division.

(To be continued)

* Abstract of a paper presented to the North Western section of the Institute of Transport. The first portion appeared February 8.

BRITISH TRANSPORT POLICE

Changes in Organisation

IN December, 1956, the British Transport Commission invited Sir Alexander Maxwell, G.C.B., K.B.E., former Permanent Under-Secretary of State for the Home Department, to examine and report on the functions and organisation of the Commission's police force. By arrangement with the Home Office, Sir Alexander was assisted in his task by Sir William Johnson, C.M.G., C.B.E., one of H.M. Inspectors of Constabulary.

The Commission has decided to implement certain changes which were recommended in Sir Alexander Maxwell's report in regard to the administration and organisation of its police force. For this purpose the Commission has appointed a police committee, with the following: Lord Rusholme, member of the Commission (chairman); Mr. D. H. Cameron of Lochiel, T.D., member of the Commission; Mr. M. H. B. Gilmour, chief solicitor and legal adviser, B.T.C.; Mr. J. Haworth, member, London Midland Area Board; Sir Frank Newsam, G.C.B., K.B.E., former Permanent Under-Secretary of State for the Home Department; Mr. K. W. C. Grand, general manager, Western Region, British Railways; Mr. A. H. Grainger, deputy-chairman, London Transport Executive; and Sir H. Reginald Kerr, K.B.E., C.B., M.C., general manager, British Transport Waterways.

The main recommendation in the report is that the British Transport police force be maintained as a unified force with a single head and a clear chain of command. The Commission has accepted this recommendation, also a further recommendation that the post of chief police officer as it now exists be abolished and that there should be an executive head of the police force carrying the title of chief constable, with full responsibility to the police committee for the efficiency and wellbeing of the force. This post will shortly be publicly advertised.

Colonel M. McK. Jesper, D.S.O., O.B.E., M.C., E.R.D., the present chief police officer, will be retiring from the Commission's service shortly after the appointment of the chief constable, but his services will be retained in a consultative capacity for a further period.

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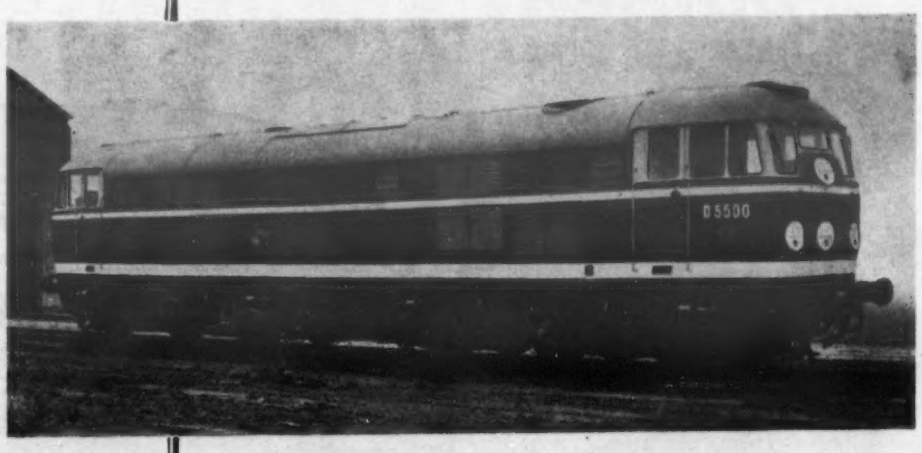

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MODERN AIRWAYS and COMMERCIAL AVIATION SECTION

THE CONTROL OF AIR TRAFFIC

Some Future Requirements

*By Air Commodore W. E. G. MANN, C.B., C.B.E., D.F.C., R.A.F. (Retd.), Director-General of Navigational Services, Ministry of Transport and Civil Aviation**

THE increase in traffic and the great advances in the design of turbine engines and transport aircraft have resulted in our air traffic control system nearing saturation point and on occasions being unable to clear traffic as expeditiously as I should like. This may cause delays in the air or on the ground or force aircraft to be flown at uneconomic altitudes. Air transport movements at London airports now exceed 130,000 a year, a figure we had not expected to reach until after 1960. For 1970 the forecast is 274,000 a year, by which time a considerable percentage of the aircraft will be jet powered and thereby more exacting in their operating requirements.

The requirements of turbo-propeller aircraft fortunately are somewhat more flexible, but the question that must be faced is: can regular, safe and economic operations be carried out by aircraft with such rigid operating requirements, or should the designers of aircraft and engines be asked to provide aircraft with more flexible operating characteristics?

En Route Requirements

The ability of air traffic control to handle movements expeditiously and safely depends on the airspace available in relation to the density of traffic and on the accuracy and frequency of information passed to control regarding the progress of each flight. There is a practical limit to the amount of airspace that can be reserved exclusively for transport work in the United Kingdom and in certain areas this is much reduced by military and experimental activities.

With the increase of transport traffic some additional controlled airspace will have to be provided and it has already been agreed with the other users of the airspace that the top of our national airways will be raised from 11,000 to 25,000 ft. But clearly civil aviation will have to be more economical in the use of controlled airspace in areas of high traffic density.

Prediction of Traffic Distribution

To achieve this the air traffic controller must be able to predict much more accurately the future distribution of traffic both some time ahead for long range flights, such as Atlantic crossings, and in the immediate future for traffic along airways and in control zones of high traffic density. Therefore, frequently renewed information on the position, track being made good and ground speed of aircraft will be required at control centres.

The accuracy of traffic predictions will depend to a considerable degree on the accuracy of the meteorological information available. Therefore any improvements in meteorological forecasting will help. But since some inaccuracies must remain, adjustments in air speed will be necessary if aircraft are to make good the ground speeds on which long range traffic predictions had been calculated.

Because of the obvious advantages of radar I think the best solution would be to construct four long range stations which with aerodrome radars should give cover over the controlled airspace in the United Kingdom from a height of 5,000 to at least 30,000 ft. An essential development would be the introduction of secondary radar with the carriage of radar transponder beacons in aircraft. This would further increase the radar coverage, particularly in height, and enable information such as aircraft identity and height to be automatically transmitted to control.

Navigational Aids

Clearly, if jet aircraft require much greater freedom in the vertical plane and vertical separation cannot be used to any extent, then horizontal separations must be considerable reduced in order to increase the overall capacity of the system or even to keep it at the present level. Aircraft must, therefore, be navigated much more accurately. For this reason, the United Kingdom, with the support of British European Airways, has consistently advocated for many years the international adoption of the British Decca Navigator system in high traffic density areas. Similarly separations could be greatly reduced and control could provide a better service of greater capacity over the Atlantic if all aircraft were navigated more accurately and operators agreed to some pattern of tracks being normally flown.

The United Kingdom has encouraged the development and adoption by airline operators of a British self-contained airborne device giving high accuracy, known as Doppler, and has also undertaken the testing and evalution of a ground-based long range system known as Dectra. Dectra equipment has the advantage that Decca Navigator cover is also made available and an integrated long and short distance navigational aid is therefore provided. Early tests are most promising and hold out hope of an accuracy of five miles in mid-Atlantic.

Light Traffic Areas

The Doppler system would be complementary to other aids over such areas as the Atlantic and Europe and would be of the greatest value to operators and control in other areas where traffic is light and ground-based aids cannot be made available. In areas where traffic is less dense and where radar cover cannot be provided, improved accuracy of navigation could provide the necessary increase in capacity, if the information available to captains could also be made available to the responsible control centres. Therefore, a means of automatically transmitting from the air information on the progress of flights is required.

The nerve system of the air traffic control organisation is a large and complex communications network through which all essential information must be carried to the executive control centres concerned for action and to all other interested parties in a form ready for immediate use. The quantity of this information has increased tremendously and is continuing to do so. It is becoming impossible manually to collect, collate and display this vast amount of information with adequate speed.

Automatic Data Handling

Electronic memory devices and computing techniques being developed are promising and this data handling task is a stimulating challenge. Even when electronically collected, collated and stored, it is difficult to see how the information can be presented to executive control officers in a three-dimensional form that will clearly indicate the present traffic situation and that about to develop. The extent to which automation can be introduced into this system is not yet resolved, but it is evident that the computer cannot replace the highly trained controller when some degree of judgment or improvisation is required. The answer must be found and the form and type of data to be transmitted over the world's aeronautical communication system must soon be standardised, if full advantage is to be taken of the possibilities of electronic memory devices and computors.

Terminal Area and Aerodrome Requirements

With many airways converging as they do on the London control zone, traffic density is bound to be high. During busy periods the main problem at the control centre is how to clear outbound traffic up and through the inbound traffic without causing departure delays or keeping the aircraft at an uneconomically low height below inbound traffic for an unduly long time.

The fuel consumption of turbine-powered aircraft is excessive at low altitudes and, therefore, departures must not be delayed, rapid climb-out tracks must be provided and high-level holding patterns established for inbound aircraft. To achieve these aims improved navigation by the means suggested, as well as better radar cover, is essential.

But even if all this is done, the time will come when the London control area will not be big enough to handle traffic speedily and I am sure that it will require more airspace in the future if safety and regularity are to be maintained. The economic operation of the London airports will depend on achieving high landing and take-off rates which in turn depend on the ability of airways and zone controllers to handle all inbound and outbound traffic without delays.

Approach Speeds

If the approach speeds of different aircraft vary considerably the slower aircraft following a fast one will frequently land behind time and thus reduce the landing rate. Unfortunately it is probable that the wing-tip vortices of certain new aircraft about to be introduced will set up turbulence which may persist for some time in calm air to an extent that separations would have to be increased and therefore the landing rate correspondingly reduced. Failure to do this might result in the pilot of the following aircraft being unable to control his aircraft safely at low height during the most critical part of the approach and landing.

Therefore, if airports are to be economically operated to their maximum capacity the design of aircraft should permit them to conform to a reasonable range of approach speeds as required by control. I believe that if the speeds could also be reduced, smaller separations would be possible giving a higher landing rate in all but the worst weather. Our aim should be 60 landings per runway per hour in fair weather and at least 40 in bad weather. The above are important factors which it seems to me are not always taken fully into account by the designers and operators of transport aircraft.

Overshoots

Finally, overshoots, which disrupt the landing flow, are to be avoided. Even with those aircraft equipped to feed the Instrument Landing System information into the auto-pilot and able to make an automatic approach, the pilot has to take over about one mile from the runway and make a visual landing. It is important therefore that the pilot is given the best possible visual guidance during this critical stage. A device to give better glide path information is also being developed and should soon be installed at our airports.

Automatic blind landings are possible today but it will be many years before they will be reliable enough for air transport work. Therefore, any electronic, infra-red or other device which could present to the pilot the essential information he uses to carry out a landing in good weather would be invaluable.

VTOL and STOL Aircraft

We have had little experience of VTOL or STOL aircraft, but that with the B.E.A. experimental unit has shown that helicopters can be controlled safely at airports and air stations. Although these craft normally fly at heights below the airways, the routes to be followed would still be complicated by having to avoid numerous aerodrome circuits, zones and other reserved areas. However, I doubt whether heavy VTOL and STOL traffic could be accepted at an airport without reducing the movement rate of more conventional aircraft.

Also, I have some misgivings at the approach speeds of 150 knots or more of some of the jet aircraft soon coming into service. Longer runways will be required; higher cloud base and better visibility will be needed to give the pilot time for any necessary adjustments before the landing, even after an automatic approach. Therefore the number of overshoots and diversions will tend to increase; and if an accident occurs casualties will be greater.

Is there not a happy mean between an approach to the landing area at a speed of zero knots and one of 160 knots? If aircraft could approach at a common speed of the order of 80 to 100 knots higher landing rates and increased airport capacities could safely be achieved. Both airports and transport aircraft could then be operated more economically.

*Abstract of the latter half of the fifteenth Brancker Memorial Lecture of the Institute of Transport presented in London on February 10 by Captain V. A. M. Hunt in the absence through illness of the author.

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Austin Centralisation in Australia

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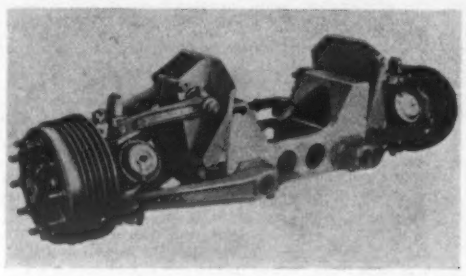
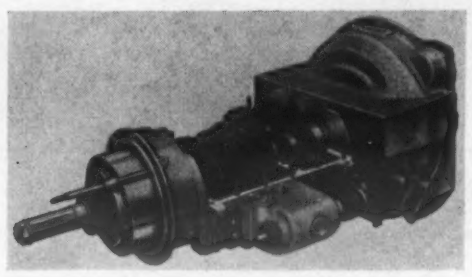
ONE of the biggest users of the Motor Industry Research Association test track at Lindley, near Nuneaton, is F. Perkins, Limited, whose diesel-engined test lorries and vans have covered 324,000 miles on the M.I.R.A. track alone in the last 12 months. Between three and five Perkins test vehicles use the track every day, putting up an aggregate mileage of approximately 1,500 miles a day. These are supplementary to the extensive road tests carried out in Britain, on the Continent and in Canada by the company, often in conjunction with manufacturers and operators.

David Brown 10-Speed Gearbox

DESIGNED to permit the engine to run at its most efficient speed over a wide range of load and operating conditions, a new 10-speed gearbox for maximum input torque of 480 lb./ft. has been introduced by the automobile gearbox division of David Brown Industries, Limited. The basic gearbox is the established DB557 five-speed constant-mesh unit, which is available with direct-drive or overdrive top, which has mounted integrally with it a two-speed epicyclic range changer, which has also been available hitherto as a separate unit. The 10-speed unit has been designated 557A and its introduction has coincided with modification of the basic box by fitting gears of greater face width to permit stepping up the input torque limit from 350 to 480 lb./ft. The epicyclic auxiliary unit provides ratios of 1 to 1 and 1.375 to 1 and range changing is effected mechanically by a separate two-position lever.

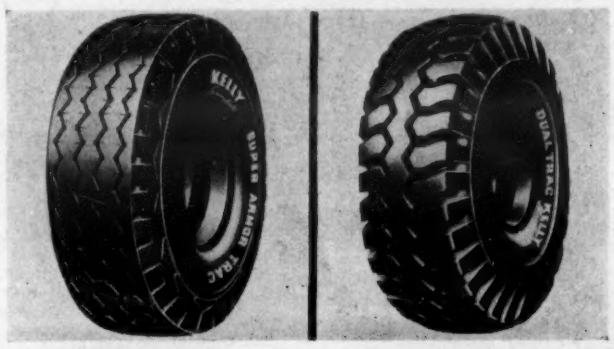




The independent suspension developed by Leyland Motors for the 300 integral buses and coaches now building for Netherlands Railways; right, the new David Brown 10-speed gearbox for 480 lb./ft. maximum input torque

Kelly-Springfield Tyres in U.K.

AS we recorded briefly in our last issue, the Kelly-Springfield Tyre Co., Limited, has acquired manufacturing facilities in Britain for its range of car and commercial vehicle tyres and tubes and for a tyre re-moulding service. The range includes tubed and tubeless black and white sidewall car and van tyres in four and six ply and commercial vehicle tyres to cover upwards of 92 per cent of the sizes in common use. The Kelly-Springfield company has 64 years of tyre-building experience and its products have earned a ready public acceptance and high reputation in most countries of the world. The general-purpose commercial vehicle tyre is the Super-Amor Trac, which is moulded to the rounded shape assumed under load on the road. This is said to provide more relaxed and cooler running. For dual-purpose on- and off-road running, the Dual Trac is designed to provide good grip and is built of extra-durable rubber to resist snagging and tearing.



Two Kelly-Springfield commercial vehicle tyres, the Super-Armor Trac and, right, the Dual Trac, now to be made and marketed in Britain

Polythene Storage Bins

MANY uses in the garage, workshop and stores are likely to be found for the Kabi moulded polythene storage bin introduced by Precision Components (Barnet), Limited. Claimed to be practically indestructible, the bin measures 13 in. by 7 in. by 3¼ in. and cost 7s. 9d.

Molytone Grease Range

THE combination of bentone grease and molybdenum disulphide introduced some time ago by Rocol, Limited, under the name Molytone, has been expanded into a range of greases to cover a wider field of application. The new Molytone 265 grease is suitable for general greasecups and ball and roller bearings over 2 in. in diameter running at speeds up to 2,000 r.p.m.; Molytone 320 (now regarded as the general-purpose grease in replacement of the earlier single grade) is designed for pressure and automatic lubrication systems; and Molytone 380, an ultra-

Trico Catalogue

NOW available from Trico-Folberth, Limited, Great West Road, Brentford, Middlesex, is the new Trico catalogue which describes and illustrates the company's established windscreen wiping and washing and signalling equipment as well as a number of new items. These include a Duo-Matic washer, a washer co-ordinator, a swing mirror and curved wiper blades.

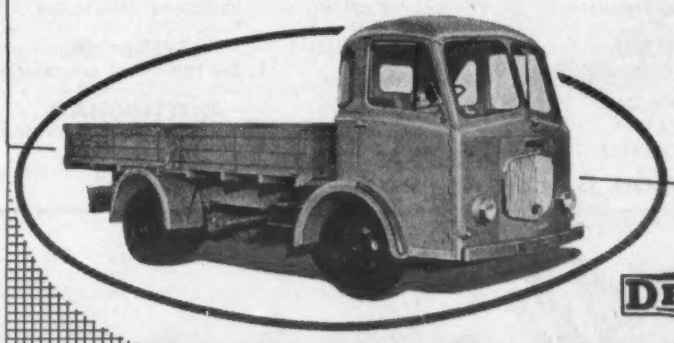
Albion Royal Scot

FIRST of a batch of 20 new Albion underfloor-engined six-wheeled buses were shipped last week to Cape Town for South African Railways and Harbours Administration. Designated Royal Scot, the new vehicle is powered by the Leyland-Albion O900 horizontal diesel engine of 230 b.h.p., which drives through a six-speed overdrive gearbox and double-drive worm-gear bogie. Bodies will be built by Bus Bodies, Limited, Port Elizabeth, and will seat eight first-class and 53 second-class passengers. The vehicles are intended for high-speed long-distance services in sparsely populated districts and over indifferent roads. They are designed to haul separate four-wheeled luggage trailers and to operate at a gross combined weight of 21¼ tons. A more detailed and illustrated description of the Royal Scot will appear in a later issue.

LOW LOADERS

The Dennis range of low load vehicles is based on many years of specialisation in this field. Models are available in both the 3-ton and 6-ton payload classes with extra-short and extra-long wheelbases. In addition the 3-ton class may be equipped with special cab to reduce turning and swept circles to the absolute minimum.

A wide choice of tyre equipment, power units, forward or normal control is an outstanding feature of Dennis specification. Your Dennis Agent is specially qualified to discuss low-load vehicles and advise on the most suitable model for your particular application.



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OFFICIAL NOTICE

ULSTER TRANSPORT AUTHORITY

CONTRACT FOR 4-TON AND 5-TON LORRIES

THE Authority invites tenders for the following:

(*a*) 16 4-ton normal control lorry chassis with cabs.
(*b*) Alternatively 4-ton vehicles with allowances against second-hand vehicles in part exchange.
(*c*) 16 5-ton normal control lorry chassis with cabs.
(*d*) Alternatively 5-ton vehicles with allowances against second-hand vehicles in part exchange.

(Above quantities are approximate.)

Tender forms, giving specifications, may be had on application to the Stores Superintendent, Duncrue Street, Belfast.

Tenders will not be considered unless submitted on the Authority's Form of Tender.

Applications for Tender Forms must be accompanied by a deposit of £1 which will later be returned provided a bona fide tender is lodged (whether successful or not), or provided the Authority is satisfied there was some good reason for not lodging a tender.

Tenders should be sent to the Secretary, Ulster Transport Authority, 21 Linen Hall Street, Belfast, in a sealed envelope, endorsed "Tender for Lorries," so as to be delivered not later than 5 p.m. on Friday, February 28, 1958.

An official receipt must be obtained for each Tender delivered by hand. Tenders sent by post should be registered.

The Authority does not bind itself to accept the lowest or any Tender.

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BONUSES FOR PLATFORM STAFF

Incentive versus Merit Schemes

INTRODUCTION by Glasgow Corporation Transport Department of a merit bonus scheme for drivers and conductors had not solved all the problems confronting the road passenger industry, only that of attendance, for which it was evolved, said Mr. E. R. L. Fitzpayne, general manager of the undertaking, in a paper, "Work Study and Transport," presented at the British Institute of Management work study conference in London on February 6. It was, in fact, a sad reflection on human nature that the disciplinary action made possible by a staff surplus at the beginning of 1955 achieved the same effect as the merit bonus in 1956. We were compelled to examine our problems in an era of full employment, with social services and a rising standard of life. The best way of ensuring the continuance of these benefits was, it must be realised, increased productivity and reduced costs.

The basic fact in bonus schemes was that the public was not prepared to pay higher fares, while any form of incentive scheme for drivers and conductors must substantially increase operating costs. This being the case, someone must decide how important an efficient public transport service was to the community; and it might well be that it would be necessary to meet some of the costs of operation by either local or national funds.

In the first instance, this could be accomplished by the abolition of the fuel tax which was such a heavy burden. Subsidies of any kind were undoubtedly bad in principle, but even in industry the incentive paid to the indirect worker was a form of subsidy, either from the producers or the consumers. Nor was this suggestion revolutionary, since many large cities throughout the world were operating their public transport undertakings at continual losses which were met from public funds. In Copenhagen, where a Transport Board is being formed (said Mr. Fitzpayne), a novel proposal had been made that the city or government shall be responsible for all capital charges, while the board will meet only operating charges.

Workshop Bonus Schemes

His paper outlined the workshop incentive schemes in force in the central overhaul plant in Glasgow and in the bus garages and tram depots. He hoped that possible action by the unions to secure national ratings for particular jobs performed in a bonus scheme would be resisted as the variable factors encountered made it unreasonable to standardise job times.

Of platform staff, he said that every municipal operator was anxious to improve the standard, to reduce turnover and to employ men instead of women conductors and would readily adopt a scheme to effect these improvements if a feasible one were forthcoming: operators would admit that with full employment the task of maintaining a disciplined staff was almost hopeless, nor was it made any easier by the decline in general behaviour of many of the travelling public. It might be that, because of love of independence, courtesy had never been a strong British characteristic, but no one could expect their servants to be polite if they themselves did not display similar politeness and consideration. While operators had not found a method of introducing a successful scheme of work study for drivers and conductors, industrial consultants were invariably wildly enthusiastic about the schemes which they could introduce. They never admitted a problem could not be solved.

A Consultants' Scheme

Glasgow had invited the principal firms of consultants to prepare proposals for a traffic incentive scheme, but none of the schemes put forward appeared feasible, although the most ingenious plan was that submitted by Personnel Administration, Limited. Its recommendations were:

1. A five-day working week on a rota basis.
"It is appreciated that this somewhat radical step would require more staff than you have immediately available. However, it is our opinion that adoption of this suggestion would quickly reduce labour turnover and thus provide the extra number of workpeople required. The extra personnel required, however, would not be as great as would appear since the working day would be extended so that each employee would still complete 44 hours of work in five days."
The advantages of this proposal can be summarised as follows:
(*a*) Each employee would have two clear rest days in every seven.
(*b*) Each employee would have two Saturdays and two Sundays off in every seven weeks.
(*c*) In view of the longer working day, non-operating time between shifts would be reduced and there would be less daily overtime.
(*d*) The department would be involved in no additional cost.
2. At the same time as introducing a five-day week the overtime premium for Saturday and Sunday working should be consolidated into a standard hourly rate.
"The advantages of this step would be as follows:
(*a*) Excessive fluctuations in weekly earnings would be avoided.
(*b*) As each day would bring in the same income there would be no advantage in working on a Sunday and subsequently being absent for a day during the week.
(*c*) Overtime premium would only be paid after working 44 hours and not on a daily basis as at present. This would encourage regular attendance."
3. Introduction of a service bonus.
"It is generally accepted that there are only a limited number of opportunities whereby traffic staff can be promoted. In the past long-service men were given preferential duties. As a result of pressure from trade unions this practice has been discontinued. It is felt, however, that there should be some recognition for long service as your records show that in the main these employees are by far the most satisfactory, being more reliable and less prone to accidents. It is suggested, therefore, that length of service should be recognised by the payment of a bonus amounting to about one shilling per week per year of service to a maximum of ten shillings. It is our view that this would go a long way towards encouraging your more experienced employees to remain in your service. It is understood that there are several precedents for this practice in other transport undertakings."
4. Introduction of an efficiency bonus.
"As was pointed out earlier in this report, it is only possible to earn a satisfactory income by working excessive overtime. This practice is undesirable from many points of view, not the least of which is the difficulty of maintaining long hours of working indefinitely without injury to health and morale. In the event, however, that you had sufficient personnel to eliminate the need for overtime working, the basic wage of approximately £7 per week would require to be augmented. It is recommended, therefore, that an efficiency bonus should be introduced amounting to about 26s. per week which would be based on a combination of the following factors:
(*a*) Freedom from accidents. In this respect the existing payment of twenty-six shillings per six months has long since lost its effect as an incentive.
(*b*) Regularity of attendance and punctuality of time-keeping.
(*c*) Observation of official regulations and freedom from disciplinary infringements.
Such a bonus would be applied on a crew basis covering both the driver and conductor."

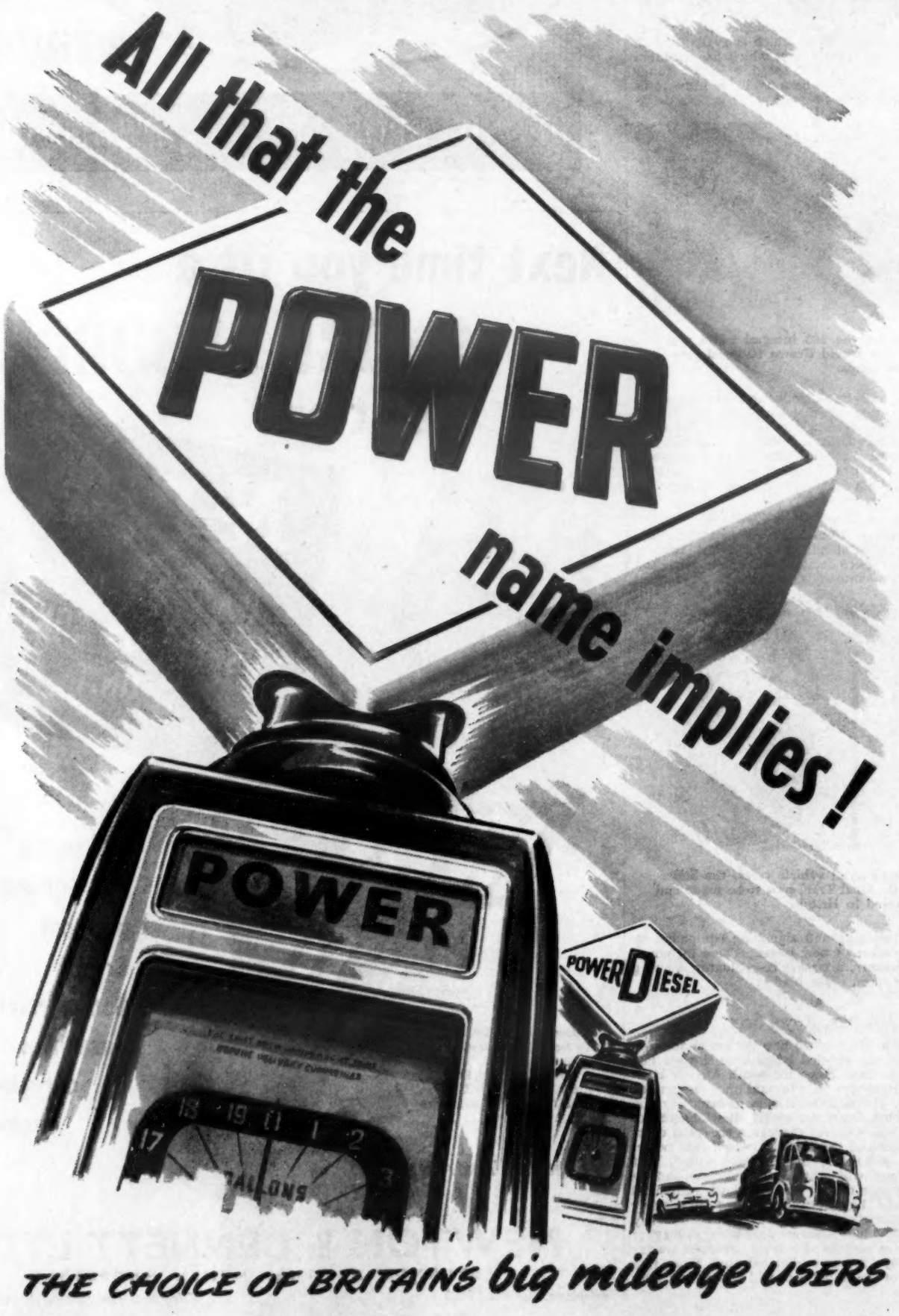
GLASGOW MERIT BONUS FOR DRIVERS AND CONDUCTORS: CONDITIONS

1. That, subject to the approval of the National Joint Industrial Council, and from a date to be fixed by that body, a merit bonus of 11s. per week be paid to drivers and conductors of tramcars, trolleybuses, motorbuses and underground trains who during the week have completed their weekly allocated duties plus any contracted overtime;
2. That any conductor or driver who during the week fails to complete such allocated duties plus contracted overtime by reason of sickness, absenteeism, late reporting, missed reliefs or suspension shall forfeit his bonus for that week;
3. That the payment of this merit bonus in no way abrogates the existing disciplinary procedure regarding late reporting, absenteeism, missed relief and other breaches of the departmental regulations; and
4. That this merit bonus shall automatically terminate if a national award is made covering either conditions or wages and shall then be subject to fresh negotiations between the union and the Corporation.

Weakness of Incentive Payments

Ultimately Glasgow adopted a simple scheme based purely on attendance (reproduced here). Mr. Fitzpayne included also the details of the incentive bonus in operation at Birmingham, and an outline of the Manchester scheme. This latter scheme, he said, was of special interest as a brave effort to establish an incentive bonus, but its weaknesses were so apparent that it was unlikely to set a pattern for other undertakings. Uninformed people often expressed the view that the simplest scheme would be to treat the driver and conductor as salesmen and pay them a commission on the revenue they collected, but such a scheme was not practicable.

The prime duty of a passenger transport service was to operate a regular service, and one of the main criticisms today of service was that it was irregular, due, of course, to traffic congestion and the bunching effect of traffic lights. Since operators had been compelled to employ female conductors there had been instances, too, of drivers with a greater sense of gallantry towards the conductress than their sense of responsibility to the public deliberately driving close to the vehicle in front, so that their conductress might carry few passengers and thus have an easier duty. Payment by commission would have the reverse effect: each bus would operate as a separate unit, and the driver would be encouraged to hang back or accelerate in order to attract as many passengers as possible to his particular bus. It was worth recording that in certain undertakings in the Netherlands where there are coins of very low value, it was customary for a passenger to tip the conductor, and this custom eased the problem of introducing one-man operation when the driver hoped to get the tips in future.



SOCIAL AND PERSONAL

Vehicle Manufacturers Honoured

FIVE former executives in the heavy vehicle industry have been elected honorary members of the British Transport Vehicle Manufacturers Association (Britavema). They are: Mr. F. G. Couch, lately director, Transport Vehicles (Daimler), Limited; Sir Robert Fryars, lately chairman and managing director, A.C.V. Sales, Limited, and chairman of Britavema in 1944-50; Mr. H. W. Fulton, lately managing director, Albion Motors, Limited, and chairman of Britavema in 1950-55; Mr. Sydney S. Guy, lately chairman and managing director, Guy Motors, Limited; and Mr. H. Hattersley, lately director, Dennis Bros., Limited, and chairman, heavy vehicle section, S.M.M.T., in 1953-57.

* * *

Mr. S. Tindale has been appointed marketing manager of the National Benzole Co., Limited.

* * *

Mr. J. Fairclough has been appointed chief buyer of Leyland Motors, Limited, succeeding the late Mr. J. Hampson.

* * *

The annual dinner of the Traders' Road Transport Association has been arranged for May 5 at Grosvenor House.

* * *

Mr. Robert Williamson is retiring from his position as Press officer of the Dunlop Rubber Co., Limited, but will be available as a consultant as occasion may arise. Mr. Campbell Fraser is now in charge of Press and public relations work in Dunlop, at 10-12 King Street, London, S.W.1.

* * *

The International Cargo Handling Co-ordination Association will be holding an Executive Committee meeting in Paris on February 20 and 21, at which final details of the conference at San Sebastian on May 28-June 1 and an International Cargo Handling Week (June 14-24) in Antwerp will be decided.

* * *

It is announced that sums totalling £450 were awarded during 1957 from the Maudslay Scholarship Foundation which provides funds administered jointly by the Junior Institution of Engineers and the Maudslay Society. Awards are made annually for the purpose of assisting young engineers in their technical engineering and practical training.

* * *

The following appointments are announced to the general staff and central services of the B.T.C.:

General Staff:
Mr. P. Corbishley to be senior instructor, work study training centre, Watford.
Mr. G. V. Burks to be senior statistics assistant.
Central Services:
Mr. E. J. Card, assistant (purchasing and sales), London Midland Region, to be supplies officer.
Mr. W. J. Stevenson, assistant (general), to be standardisation officer.

* * *

Mr. R. S. Boyd has been appointed secretary to the Scottish Area Board of the British Transport Commission. Mr. Boyd succeeds Mr. H. M. Herbert, who is now assistant to the chief operating superintendent, Scottish Region, B.R. He entered the service of the L.M.S.R. in 1937, served in the R.A.F. from 1942 until 1946 and after nationalisation he was employed in the new works section of the Scottish chief regional officer's office. In 1953 he was transferred to the commercial superintendent's office where he remained until 1954, when he returned to the chief regional manager's office. Since then he has occupied various posts in the works section of the general manager's office. Mr. H. M. Herbert joined the former L.N.E.R. at Ely as a clerk in 1933. He received the appointment of assistant to the district commercial superintendent, Edinburgh, in 1952 and in January, 1955, was appointed secretary to the Scottish Area Board, the position now vacated.

Mr. H. E. Bayman has retired as manager of Exide and Drydex replacement sales in this country.

* * *

Mr. K. B. Harrison has been appointed manager of the West Midland branch of Transport Equipment (Thornycroft), Limited, at Birmingham.

* * *

Mr. P. E. G. Durnford has been appointed area manager of the Lancashire area based on the St. Helens depot of A.C.V. Sales, Limited.

* * *

The Rhodesia Railways Board has announced the appointment of Mr. J. H. Allen, B.Econ. (S.A.), M.Inst.T., as deputy general manager of the undertaking.

* * *

Mr. T. H. R. Perkins, a director and general manager of the sales division of F. Perkins, Limited, is visiting India for business discussions with Simpson and Co., Limited, Madras, which manufactures Perkins diesel engines under licence.

* * *

Mr. Max Stuart-Shaw, assistant general manager of Aer Lingus (Irish Air Lines), is relinquishing his present position to become general manager of Central African Airways Corporation in Salisbury, Rhodesia. It is probable that he will take over his new duties on April 1 next. Mr. Stuart-Shaw entered civil aviation as an Imperial Airways cadet when he was 19 and held traffic, operations, administrative and managerial positions in Iraq, Egypt, the Sudan, Kenya and elsewhere. He helped to organise the B.O.A.C. Bermuda—New

Mr. M. Stuart-Shaw

York flying-boat service, also served with B.O.A.C. in Canada as commercial adviser to the North Atlantic ferry service and eventually became Montreal manager. Prior to going to Canada Mr. Stuart-Shaw was operations superintendent at Foynes flying-boat base. In 1946 he returned to Ireland and became B.O.A.C. manager at Shannon Airport. Later in the same year he was seconded to Aer Lingus as its traffic manager; he resigned from B.O.A.C. two years later to join Aer Lingus. He was appointed commercial manager in 1950 and in 1952 became assistant general manager of the company and head of its commercial division.

* * *

At the annual luncheon in London of the Exhibitors' Association, J. D. Elstone, sales manager of the agricultural and industrial division of the Dunlop Rubber Co., Limited, was elected chairman for the third time.

* * *

Mr. R. F. Graveson, who has been appointed district commercial officer, Cambridge, Eastern Region, joined the L.N.E.R. as a traffic apprentice in 1933. Since 1955 he has been assistant district goods manager, Sheffield.

At a gathering on February 3 to mark the tenth anniversary of British Road Services, Major-General G. N. Russell, chairman since its inception, was made a presentation on behalf of present and past members or officers of the board of management and its predecessor
Left to right: Messrs. H. T. Dutfield, G. Cardwell, A. Henderson, Major-General G. N. Russell, Claud Barrington, Harold E. Clay, G. W. Quick Smith, J. B. Garrett, P. J. R. Tapp, W. Beckett and G. F. Sinclair

Mr. J. A. C. Williams, M.Sc., A.M.I.Mech.E., A.F.R.Ae.S., A.B.Ps.S., has been appointed principal of the College of Aeronautical and Automobile Engineering, Chelsea.

* * *

At the annual general meeting of the Railway Club, held on February 7, Mr. T. S. Lascelles was elected president in succession to Mr. Kenneth Brown, who has retired after 30 years in office. The hon. secretary, Mr. B. D. J. Walsh, spoke in warm terms of the many services which Mr. Brown had rendered to the club and, on behalf of members, presented him with a chiming clock, suitably inscribed. Mr. Brown will continue to hold office as a trustee of the club. Mr. H. A. Vallance, who was hon. secretary from 1931 to 1949 and more recently hon. steward, was appointed a vice-president. The annual report and accounts showed continued expansion in 1957, a year which was marked by the removal to the new premises in High Holborn. The following elections were made for 1958: hon. secretary, Mr. B. D. J. Walsh; hon. treasurer, Mr. A. Roose; hon. librarian, Mr. K. G. Carr; hon. steward, Mr. T. B. Sands; committee: Messrs. H. V. Borley, D. Cullum, J. E. Norris, R. C. Riley and H. G. Smith-Sparke. The business part of the meeting was followed by a display of coloured photographs by Mr. R. C. Riley.

Mr. F. A. J. Woodworth has been appointed traffic manager of Hebble Motor Services, Limited, and will take up his new duties on March 1. For the past four years he has been manager of Red Line Continental Motorways, Limited (a B.E.T. associate), prior to which he was with the traffic department of the East Kent Road Car Co., Limited.

* * *

At a Railway Students Association meeting on February 19 Mr. R. M. Robbins, secretary and chief public relations officer, London Transport, will present a paper, "Consulting the Passenger." A visit has been arranged to Victoria Station on the evening of February 20. It is proposed to hold the 21st annual convention in Switzerland from May 10 to 18, with headquarters at Zurich. It is hoped that papers will be read by officers of the Swiss Federal Railways on the transport position in Switzerland and on general aspects of the international rail services in Europe. A number of visits will be paid to various installations of transport interest, including the railway works at Baden, Oerlikon and Winterthur; the passenger and freight terminals at Zurich; the wagon ferries on Lake Konstanz; the narrow-gauge railways of North-East Switzerland; the St. Gotthard tunnel; the Rhaetian Railway; the Arth-Rigi mountain railway; and a cable railway.

KARRIER 'BANTAM'

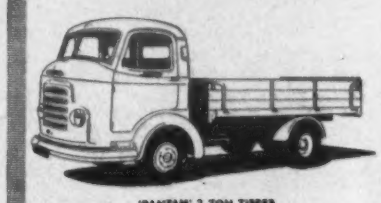
4-5 TON TRACTOR-TRAILER
with petrol or diesel power-unit and choice of coupling gear.

The Bradford Model Milk Co. —by whose courtesy the photograph is reproduced—employ these diesel-engined 'Bantams' to transport bottled milk and orange juice.

SPEEDS UP DELIVERIES!

THE KARRIER 'BANTAM' tractor-trailer combination—modern version of the original 'mechanical horse' designed and built by Karrier engineers in 1930—is a firmly established favourite in the industrial transport field. Hauling a full five-ton load with speed and economy, its manoeuvrability makes it ideal for quick work in busy city centres, and as the tractor can operate, if need be, with any number and variety of detachable trailers, no time is lost in loading or unloading.

'BANTAM' LOW-LOAD 2-3 TONNERS
with petrol or diesel engine to choice are also available.



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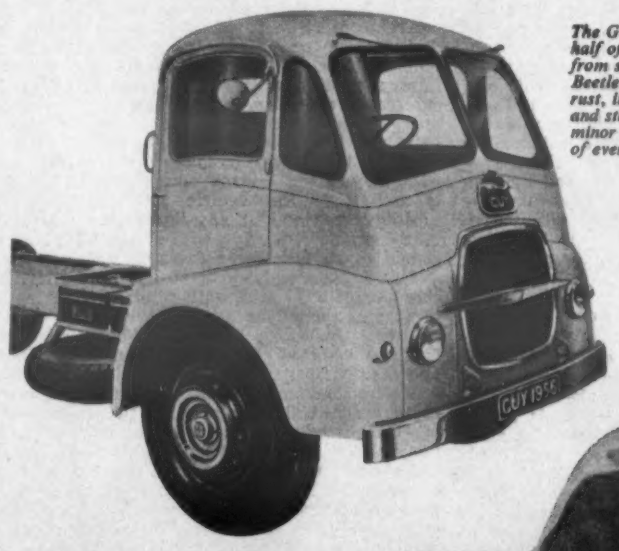

The Guy Warrior. The lower half of the bodywork is moulded from structural plastics, using Beetle polyester resin. It cannot rust, it is corrosion resistant and stands up to the countless minor knocks and bruises of everyday use.

Nearside wing of the Guy Arab bus, moulded in structural plastics. This integrally stiffened wing stands up to very rough usage but could easily and cheaply be repaired without removal, in the event of damage.

THESE GUYS ARE TOUGH!

thanks to Structural Plastics

The Guy Arab bus. Grille, mudguards, bonnet and front panels are moulded in structural plastics. The bonnet is integrally stiffened; the hinge points and snap-action catch are integrally moulded.

The confidence of the industry in structural plastics is amply demonstrated by their ever-increasing use. Guy Motors Ltd., for instance, send their ARAB buses and WARRIOR TRUCKS all over the world. With their many structural plastics bodywork components, they can be relied on to stand up to tough conditions and, if need be, can be repaired quickly and cheaply under almost primitive conditions.
B.I.P. Chemicals Ltd. not only supplies Beetle—the highest quality polyester resin on the market—but offers unrivalled technical and training facilities.

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IMPORTANT CONTRACTS

Prestwick Runway Extension

SITE preparation is now in hand for the extension by 500 ft. of the main runway of Prestwick Airport; the contract has been awarded to Kings and Co., Limited, Glasgow, which is already engaged on the strengthening of the existing 7,000-ft. main runway. The work is to make the runway suitable for use in all conditions by Bristol Britannia aircraft, which are due to start operating regularly through Prestwick in mid-April. Further extension by about 2,000 ft. will be necessary to accommodate the large jet aircraft due to enter service on Atlantic routes in 1960. While the present extension is under construction, the Glasgow—Ayr (A77) main road will be temporarily diverted, to revert to its present alignment, which crosses the extension and will be equipped with light signals and gates to halt traffic when this section of the runway is in use by aircraft, when the work is completed. The road will probably eventually pass under the runway by tunnel.

Crossley Works Plant Purchased

George Cohen Sons and Co., Limited, has purchased the whole of the machine tool plant which has become available following the decision of Associated Commercial Vehicles, Limited, to close down the works of Crossley Motors, Limited, at Stockport.

Upminster Depot Electrical Installation

London Transport announces the placing of a contract for electrical installation work at Upminster railway depot with Troughton and Young, Limited. Imperial Court, Basil Street, London, S.W.3. The value of the contract is more than £20,000 and the work is expected to be completed within a year.

North Eastern Region Contracts

Recent contracts placed by the North Eastern Region of British Railways include:

Coventry Climax Engines, Limited, Coventry, for one diesel fork-lift truck for Shildon wagon works.

Alfred Herbert, Limited, Coventry, for electric combination turret lathe for Darlington locomotive works.

Broom and Wade, Limited, High Wycombe, for two air compressors for York North motive power depot.

Blackwood Hodge and Co., Limited, London, for one Gradall multi-purpose excavator and attachments.

J. W. Roberts, Limited, Leeds, for supply and spraying Limpet asbestos for 44 first-class sleeping-cars.

E. Boydell and Co., Limited, Manchester, for four 3 cu. yd. diesel dumpers.

S.T.C. Remote Control for Kariba

A contract worth a quarter of a million pounds for the supply and installation of remote control equipment for the Kariba hydroelectric scheme has been awarded to Standard Telephones and Cables, Limited, by the Federal Power Board of Rhodesia and Nyasaland. With an initial planned capacity of 500 MW. and an ultimate capacity of at least 1,200 MW., Kariba will be one of the biggest power stations in the world. The S.T.C. equipment to be installed will give Kariba engineers finger-tip control of the system that is to link that station with existing thermal stations in the Central African Federation.

Kelvin Hughes—Ilford Equipment Exports

Close co-operation between Kelvin and Hughes, Limited, and Ilford, Limited, has led to the development of equipment which is now being sold in quantity to the United States of America. The equipment, which was designed initially in conjunction with the Ministry of Supply, comprises a Kelvin Hughes rapid processing photographic projector and specially developed Ilford films and processing solutions which makes a photographic record of information presented on a cathode-ray tube and projects it on a large screen. The processing cycle can take as little as 6 sec. and the film will keep indefinitely. Three such equipments have recently been installed by the U.S. Civil Aeronautics Administration at its Technical Development Centre, Indianapolis, for processing air traffic information.

More Olympics for Jamaica

The sizeable fleet of modern diesel buses which Jamaica Omnibus Services, Limited, has built up since taking over the franchise for bus operation in Kingston some five years ago, is to be augmented by a further 15 Leyland-M.C.W. Olympic under-floor-engined single-deck buses. Since starting operations, the company has placed orders with Leyland Motors, Limited, for 135 vehicles, 113 of which are Royal Tiger or chassisless Olympic buses. In addition the company has also imported 30 Leyland 125-h.p. diesel engines for installation in American buses, which were reported to have a fuel consumption as low as 3 m.p.g. The new vehicles are 44-seaters and instead of the standard Leyland O680 engines, O600 diesel engines will be fitted, with Leyland Pneumo-Cyclic semi-automatic gearboxes.

SHIPPING and SHIPBUILDING

Mechanical Handling in Holds

SOLUTION of one of the major cargo handling problems when mechanical equipment is used, was referred to at a meeting of the Institute of Materials Handling in Glasgow last week by Mr. J. C. Dallas, who is managing director of British Monorail, Limited. Mr. Dallas announced that his company has designed and installed special equipment aboard two tween deck cargo ships, to transport bundles of cargo which had to be placed equidistantly in holds and tween decks. He claimed that the installation was the first solution to the previously unsolved problem of moving cargo from the square of the hatch to the furthest corner of the tween decks and holds without manual aid. The new Monorail equipment was only a solution to part of a wider problem, but he and his engineers were now working on schemes for the complete mechanisation of general cargo handling, from the lorry to the hold.

Mombasa Industrial Port Area

BY the end of this month the East African Railways and Harbours Administration industrial area at Changamwe—some three miles from Mombasa—will be ready for general occupation.

Huskisson Dock Shed

CONSTRUCTION of a new shed at the west side of Huskisson Dock in Liverpool is to be undertaken. The existing shed was badly damaged during the war but having regard to the heavy demand for berths to deal with import cargoes it has not been possible so far to place it out of commission. It is now proposed to demolish the existing accommodation and erect a double-storey shed, 1,377 ft. long and 94 ft. wide, with the necessary quay cranes. A windscreen will also be provided on the river wall.

Latest Move in Colombo

IN what a correspondent describes as the first steps towards nationalisation of the port, a Colombo Port Corporation is to be set up at once. Mr. M. F. de S. Jayaratne, Permanent Secretary of the Ministry of Transport, has been already appointed chairman of the Corporation and Captain H. T. H. Jansen, Port Commission master attendant, has been appointed manager. Both appointments have been made by the Minister of Transport, Mr. Senanayake, in consultation with the Prime Minister, Mr. Bandaranaike. Mr. Senanayake told him that because of the present situation in the port, any further delay in setting up the Corporation would lead to further difficulties. Four other members of the Board will be appointed.

★

LIGHT-ALLOY ROAD TANK

(*Continued from page 5*)

which also indicates how the transference of stresses set up by motion of the vehicle is reduced. The effect of lateral distortion, which can take place between the chassis side members through the superimposed diagonals, is neutralised as far as the tank is concerned.

As has been said, the first tanks of the new design are of 2,400-gal. capacity for the transport of chemicals. The tanks are left uncoated internally and finished in frosted self-colour externally; complete with mountings, they weigh only 13 cwt. each. Fitted to the A.E.C. Mercury II chassis, with a Duramin light-alloy cab, full cargo handling equipment and operator's name boards on the sides, the tare is such that the vehicle can carry the full 2,400-gal. payload of any liquid of up to about 0.82 specific gravity within the legal gross weight of 14 tons for a two-axle vehicle.

This appears to be at least 400 gal. better than the average steel tank with similar vehicle equipment and the advantage is likely to be greater in larger tanks, for which the Thompson design is equally suited. An application for which it appears to be particularly suitable is the large frameless semi-trailer tank. Part of the difference in the cost of aluminium alloy and mild steel is offset by freedom from corrosion, thereby giving longer life, and a reduction in painting costs and the obviation of the need for internal coatings, necessary with mild steel for a wide variety of liquid loads, reduces the differential still further. Performance of the first vehicles on the road will be watched with interest, particularly the effect of the tank suspension which can be expected to reduce substantially, if not to eliminate entirely, the damaging effects suffered by rigidly mounted tanks through vibration when travelling empty.

B.T.C. TRAFFIC RECEIPTS: PERIOD NO. 1—1958

	Four Weeks to January 26, 1958		
	1958 (£ thousands)	1957	+ or —
PASSENGERS			
British Railways	8,199	8,956	— 757
London Transport			
Railways	1,806	1,921	— 115
Road services	4,326	4,632	— 306
Provincial and Scottish Buses ...	4,009	4,310	— 301
Ships	252	227	+ 25
Total Passengers	18,592	20,046	— 1,454
FREIGHT, PARCELS AND MAILS			
British Railways			
Merchandise and livestock ...	7,332	9,439	— 2,107
Minerals	3,920	4,418	— 498
Coal and coke	10,606	10,761	— 155
Parcels, etc., by passenger train	3,717	3,648	+ 69
Collection and delivery, etc. ...	934	1,050	— 116
Total Freight British Railways	26,509	29,316	— 2,807
Others	3,946	3,944	+ 2
Total Freight, Parcels and Mails	30,455	33,260	— 2,805
Aggregate	49,047	53,306	— 4,259

Comparisons are affected by the increases in rates and charges which have been authorised from time to time, by consequences of the restrictions on oil supplies from November 7, 1956, to May 14, 1957, and by the provincial bus strike from July 29 to 28, 1957

CLASSIFIED ADVERTISEMENTS

PATENT

THE Proprietors of British Patent No. 680,644, relating to Improvements in Ballast Tamping Machines for Railway Tracks, are willing to grant licences for the commercial exploitation of the invention in the United Kingdom.—Lloyd Wise, Bouly and Haig, 10 New Court, Lincoln's Inn, London, W.C.2.

CHAMOIS LEATHERS

GUARANTEED hardwearing chamois leathers. Approximately 22 in. by 16 in.; only 6s. 11d. each (minimum order six); 1 kip (30) less 5 per cent.—County Chamois Co., Limited, Rocky Lane, Aston Cross, Birmingham.

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Apply **Chief Designer**

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Abnormal Loads* • *Lifting
MOBILE CRANES FOR HIRE • Branches in all large towns

Cardan Shafts
and Universal Joints by—

HARDY SPICER

B-B type diesel-hydraulic locomotive for Indian Government Railways (Courtesy of North British Locomotive Co. Ltd.).

for
North British
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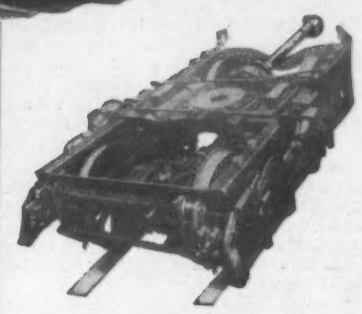

Bogie of a North British diesel-hydraulic locomotive, showing cardan shaft with Hardy Spicer universal joints, coupled to final drive reduction gearing over the drive axle.

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Printed by Odhams (Watford) Limited, St. Albans Road, Watford, Herts, for and published by, Modern Transport Publishing Co., Limited, Russell Court, 3-16 Woburn Place, London, W.C.1.